Hints to Mothers. 1823

[No. I.

HINTS TO MOTHERS,

ON THE

CULTIVATION

OF

THE MINDS OF CHILDREN,

IN

THE SPIRIT

OF

PESTALOZZI'S METHOD.

BY

A FOREIGNER,

THREE YEARS RESIDENT AT YVERDUN.

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[TO BE CONTINUED MONTHLY.]

J. G. BARNARD,
Skinner Street, London.

HINTS

TO

MOTHERS.

To attain fully the beneficial ends of Pestalozzi's method, and to foster the infant mind in that simple and artless way which nature has traced, the first elements of the method are sedulously to be practised in the *domestic* circle; as from the first proper treatment of children, we, with the aid of God's holy Spirit, may expect the happiest results for their future days.

Physical nature affords a thousand hints, which we may safely apply to moral purposes, and, guided by her, we shall succeed in avoiding, or correcting, many an error in *the most important* and *honourable,* and, when *under-*

stood, inexpressibly delightful occupation of life, the education of the human species.

Many children, in their infancy, are, in point of education, either entirely neglected, or when taken care of, this care is often misapplied by mothers or their representatives, who are unacquainted with the proper method of developing the infant faculties, and, consequently, all their zealous exertions cannot lead to the wished-for results.

As to the former case, a serious appeal to such unnatural mothers as can utterly neglect their tender offspring, in not attending personally to the essential point of *education*, would stand here in its proper place; but as I may justly presume, that every mother must know what is the most sacred duty imposed upon her, I shall withhold my reflections, and proceed to shew, what remedies can be applied in the second case, and in what manner a mother must treat a child, according to Pestalozzi's principles.

I shall now give a few general hints and rules on this subject, and may hereafter provide mothers with exercises on the elements of FORM, NUMBER, and LANGUAGE, in a graduated series of such matter, as, being entirely

adapted to the nature and capacities of the youngest children, will enable parents to occupy their little ones in a most useful manner, and to develope their minds in the spirit of what Pestalozzi calls the domestic, or fireside circle.

From the moment the child notices objects and sounds, his faculty of intuition must be cultivated by the parents. The mother repeatedly and distinctly pronounces the name of every object upon which the infant fixes his eyes, but by no means *pressing* him to repeat the same after her. If it be possible, she lets him handle the object, and notice whatever he can notice of it by means of his senses. In order to increase his power of sight, she frequently shews him more distant objects in nature, and makes him observe many things *essential* to them. In a similar manner also, the power of hearing and feeling must be excited. But whatever is done, should be by slow, or rather imperceptible degrees. Particular care must be taken that every thing near and about the child appear clean and decent, and, as far as may be, agreeable and cheerful, for the first impressions are the deepest and the most indelible.

As soon as the child can pretty well pronounce words and short sentences, the mother chooses some object, and shews him the whole of it, denominates it, lets him try distinctly to repeat the name of it; then analyzes it, by simply naming all its *essential* properties, as form, colour, weight. The object is handled, looked at in every direction, and, if possible, noticed by the sense of hearing. As the mental powers of the child gain strength, all its particulars are denominated, and the child made to repeat them, articulating distinctly every word.

Whatever the mother imparts to the child, she must do it in an affectionate manner, and these little exercises will not fail to become to him a most agreeable occupation.

She continues with the same course of exercises until he is completely master of them, and can perform the part of the mother.

When she has given her little lecture on one object, she may apply the same to another near at hand, especially to natural products, and such objects as more particularly interest the child, with the precaution, however, in analyzing any object, not to go beyond the *essential* properties, as any lessons

of this sort, exceeding a child's capacity, are utterly unprofitable, and will serve rather to confuse and tire, than to improve and amuse him.

Together with this exercise, another equally interesting and useful may be combined. Wooden cubes, oblongs, squares, or other mathematical figures, are laid before the child: —first, the most simple, as cubes, then oblongs, afterwards pyramids, globular figures, &c.

The mother points out to the child, and denominates every thing striking the senses, as their form, superfices, angles; their length, breadth, and thickness, and encourages the child to point it out himself, and repeat the denomination. She then changes the position of the figures, and asks the child what changes have been made; she produces, by placing the figures together, different bodies, and then asks the child, what new forms have been produced? The child himself makes essays of this description, and all the different forms created in this way are denominated.

After he has been entertained for a while with this amusing and instructive occupation,

he may go a step further, and be led to compare the size of figures, and to measure them by his eye. This is an exercise which cannot be too often repeated, nor too long continued. In the beginning, small triangular figures, cubes, &c. that fit well together, and of which larger triangles and cubes may be composed, will serve for this purpose.

As soon as the child has measured by the eye, he, by disuniting the figures, will immediately perceive whether he has measured rightly or not.

This exercise may be continued for *years*, and be accompanied by letting the child copy designs in increased or diminished proportions, according to a given standard. She then proceeds to a farther application, as to the outlines of windows, doors, tables, tools, &c.

Every thing here depends on a *gradual* practice and on the precaution of *not hurrying* the child on from one exercise to another, but dwelling on each until he is *perfect master* of the same.

As soon as the child is capable of managing a pencil, the alphabet of intuition, or the

first elements of geometry, may be introduced.

The straight line is shewn to him first, and denominated the horizontal and perpendicular line in the same manner. The child must repeat the denomination, and draw the line with a pencil on the slate. The mother does the same thing, and both pronounce what they are doing. This must be continued till the child is able to draw a straight line in different directions. She then lets him try to draw a line twice as long, and parallel with the former; both the mother and child do the same thing, and always proclaim, the mother what she has done, and the child what he has tried to do.

In this manner they gradually advance to lines, three, four, six times as long. Next to the lines follow the angles; first the right, then the acute, and lastly, the obtuse angle, are to be drawn, and each operation distinctly to be denominated.

The mother always performs the same operations, and when she has given the denomination, the child pronounces it after her, not advancing one step, until the child can name each sort of angles, and imitate them pretty

correctly on the slate. These operations will be more minutely described hereafter, in a series of elementary geometrical exercises, shewing mothers how to treat this useful branch with their little ones; it is therefore unnecessary to say more on the subject in this place, except that FORM and LANGUAGE must always go hand in hand, as this will give to the child the important habit, in which he cannot be too early initiated, of expressing himself on all occasions readily and correctly. Language and form being thus cultivated at the same time, the relation of NUMBERS ought by no means to be neglected. From the moment the child has an idea of unity and number, counting is to be exercised. This may best be done with small wooden cubes. The child ranges them in a row, and the mother counts them over, first as far as 4, 6, 8, 10, afterwards to 20. The child repeats the operation forward and backward, till he is perfect in it. Now one, two, three of them are successively taken away and again added; two or more squares are formed of them, and compared one with another, to see by what one is greater than the other. A number of cubes is divided into several equal parts; each

of these parts is doubled, tripled, quadrupled, &c.

These and many other exercises can be continued for a length of time within the number twenty, with every possible variety of application in adding, subtracting, multiplying, and dividing, and will lead the child to important results. The little pupil will, by means of this exercise, be enabled, first by way of intuition, and hereafter without it, to determine, if one cube has been added, how many more must be added, in order to produce a square; or if one has been taken away, how many more must be taken away, if a square is to remain; then if two be added, or two taken away, and so on.

It will lead the young pupil in time so far as to enable him to extract the square root by head, which operation certainly does not come within the province of the mother, although she will prepare him for it by means of this very easy and intuitive exercise. As soon as the child can count with cubes or with other small bodies, and has gone through some easy numerical operations, the mother may then proceed to the series of exercises hereafter intended to be given. These exercises following each other in such gradual

succession; the immediate preceding one, forming an imperceptible link with the next following, the child will ere long be as firm in them as the mother herself, PROVIDED they be judiciously administered. Here it will be necessary to make the following observations:

1st. These exercises are merely a preparatory step to arithmetic, making the child distinctly conscious of what he is doing when calculating. The power of combining numbers should not be debased to a mere mechanical operation, with little or no exercise of the mind.

2d. No mother should, according to her fancy, either omit or shorten any of these exercises; for it would but destroy the end of them, and prevent the child from arriving at a clear consciousness of all his future operations; as experience has sufficiently shewn, that a slow and well-connected progress only can bring the child to that clear insight, and intuitive perception, which in time will enable him to solve with facility the most complicated problems.

3d. Should any mother be led to think that so many precursory steps, so many repetitions in the mere introduction to calculation, be

superfluous, I beg leave to inform her, that this is the *first fundamental exercise of the power of* THINKING.

4th. Reasons should be accurately given, by the child, for each step in the proposition; and, lastly, knowledge and imitation of forms, knowledge of a just and correct denomination by words, and knowledge of numerical combination, or number, should be cultivated *harmoniously*, and not one in preference to another.

In case a mother would commence these exercises with children of a more advanced age, let her not begin in the middle, nor set out from an arbitrary point, according to her fancy, but always from the first elements; in which, however, she may proceed with a quicker step, as children of this age are already more conscious of what they are doing, though they never ought to leave off any exercise, until they can give it readily, and with precision, to others. When the child has been exercised for some time in this manner, which may be continued to the period of his entering his seventh year, then, and not before, ought he to be taught reading and writing.

Let me observe here, that the mother must proclaim, before the child, each syllable,

pointing to the printed signs of them, and make him repeat the same, letting him pronounce sharply and distinctly; as the future elegant and articulate enunciation very much depends on a proper attention being paid to these first exercises. She repeats the syllable till the child can correctly pronounce it; and before she adds a new board or column of letters, he must be able to say the whole string of syllables before him, forward, backward, and also in an irregular manner.

Reading and writing exercises never ought to be separated, but go hand in hand*.

The hand, by the drawing of lines, having already acquired a certain degree of steadiness, writing is greatly facilitated.

The mother now proceeds in shewing the grammatical difference of words. She explains the meaning of the terms substantive, adjective, verb, adverb, &c.; and the moment the child has comprehended her, she desires him to write down the description of such a word on the slate, and below it a series of

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* These exercises should be performed with chalk, standing before a board, or, better still, a slate, three feet or *four feet* square, placed upon an easel.

substantives, verbs, and adverbs; she doing the same thing. The words are then looked over, compared with the description, and the child made to observe, *where* and *why* he has failed.

This exercise is continued until he exactly knows the difference between these words.

The substantives and verbs are then considered, with regard to their modifications and changes; the chief rule of the changes is pronounced by the mother, repeated by the child, and written on the slate by both; after which he is desired to find out a series of examples relative to the changes, and to write them below the rule. Next to these exercises, the principal rules of grammar are illustrated.

The rule is enunciated by the mother, repeated by the child, and written on the slate by both.

The child then is to form one or more phrases, by which the rule is put in practice; and should he not succeed in finding out any, she herself invents a suitable sentence, and lets him repeat and write it down, omitting however the word exemplifying the rule, which the child is to find out, and to put into its proper place; for instance, a sentence in which

the prepositions are left out,—*a letter has* been written .... my brother, and has been sent .... the post-office two hours ago, to be forwarded .... my father, who is returned .... the West Indies, and safely arrived .... Portsmouth. Many sentences of this description, in which the verbs, or other parts of speech, are omitted, may be given to and completed by the child.

Similar, but more difficult exercises of this sort may be given to children, whose thinking powers have been developed and strengthened to a certain degree; for instance, the mother, or teacher, lets them read one day a short but interesting moral tale, and dictates the same to them some days after, leaving out here and there some principal part of the tale, at each omission bidding the children leave some space in their writing, to be filled up afterwards by them.

This is a very interesting exercise, particularly when performed by several children at the same time, as it not only shews who has been the most attentive at the first reading, but also affords the mother an excellent opportunity of inculcating a lesson of morality, by impressing on their tender minds the

necessity of a scrupulous regard to exactness in whatever they relate.

The child having been sufficiently exercised in the application of the principal rules of grammar, and being capable, upon attentively looking over what he has done, of correcting the errors committed, either through neglect or want of reflection, is led a step further, and begins to give a written description of any thing he has heard or seen. The mother or teacher peruses it, and marks, with a certain sign, all grammatical errors, with some other sign all expressions that are not sufficiently clear, and by questions in the margin, assists him in the recollection of any circumstance which may have been omitted in his description.

Every one of the before-mentioned exercises may be done in two languages, at the same time, if the mother or teacher have the command of them, although, for my part, I do not approve of it as a general practice; as, on the one hand, it is likely to create confusion in these exercises, and to puzzle the child too much; and as, on the other hand, each language has some rules and idioms peculiar to itself, widely varying from those of another.

As long as the mother endeavours to engage her little ones in these useful and entertaining tasks, I advise her, by all means, to pursue the same occupation as the child, for the following reason: the attention of the child will be doubled, and his exercise appear far more important to him, when he sees that his mother is occupying herself in the same manner. The attention of children is never exclusively fixed on what the mother or teacher is endeavouring to teach, unless they see the teacher's attention exclusively turned towards them, and vice versa: the teacher is not only absolutely prevented from directing his entire attention towards the pupils, when he is engaged in any other occupation, but, what is still worse, teaching is too apt, in that case, to be considered a subordinate occupation, if not a troublesome interruption, instead of engaging, as it ought to do, and to be profitable must do, the undivided powers of the mind and the affections of the heart.

If a mother has not so much of a musical ear and taste, as to sing in a pure and melodious strain, she certainly cannot cultivate her children in this branch; but if she has, she sings before them pure tones, in simple but

melodious succession, encouraging them to sing after her.

Two rules, in cultivating the musical power in children, ought to be particularly observed.

1. To shew, and to sing before them, nothing but what is truly harmonious and melodious: and,

2. To make them feel, and mark out themselves, whatever is harmonious; but not to explain, nor to define, either musical beauty or harmony. Mothers will, of course, be very scrupulous, as to the purity of the *sentiments*, and guard against the productions of the music shop.

So far, I am convinced, is every mother capable of exercising her children, if she only have a determined will to do so; and she will do so, as soon as she is fully persuaded that no one can go through these elementary exercises, so well and so successfully as a mother, who, by means of her maternal kindness and affection, will vivify and fertilize, what, in other hands, might appear the dullest, and most sterile subjects of instruction; who will acquit herself of this labour of love, with a skill, which the best and most zealous go-

vernesses can only hope to attain, by persevering practice, under the guidance and encouragement of a judicious mother. Should she be prevented by want of time—of time to acquit herself of her most important earthly vocation, her situation must be truly distressing, and cannot but excite our commiseration; but, I should imagine, that at least some hours of leisure may be found for this purpose, by a well regulated distribution of her daily occupations, and by conscientiously subordinating the pleasures of society and conversation, to the sacred duties incumbent on a mother.

Has the mind of a mother been but tolerably cultivated in her youth; has she acquired useful knowledge and accomplishments, not for the purpose of idle display, but for the better discharging the duties of her future vocation, and for the sake of humanity, she can and ought to go still farther, in cultivating the minds of her children, and more particularly, is it her duty so to do, in regard to her daughters, who should be led to consider it as their indispensable duty, and supreme delight, one day to take their turn in this great work of humanity, communicating to others

what they had received, either in their own families, or should they not be destined to marry, in the families of their brothers and sisters, to whom such assistance would be invaluable.

Thus mothers, instead of seeing their unmarried daughters passing through an existence, without aim, without interest, solely occupied in self, would witness the *personal* exertions of their daughters, in that high, most useful, and (properly *understood*) most interesting pursuit, *Rational* Education; for insignificance, weariness, and melancholy, substituting dignity, usefulness, and happiness. Let mothers, in justice to their daughters, ever keep these considerations in view.

For cultivating the *moral* principle, the mother must, above all, endeavour to excite in the heart of the child, GRATITUDE, FAITH, and LOVE: and this will be easy, as every mother is possessed of the means, in the right application of which, maternal affection *alone* surely will guide her. This, and this alone, is the powerful spring, by means of which she can put the child's heart into action, and give a just direction to every one of his internal feelings and affections.

(*b*) A second and principal means of cultivating the moral principle is to act always, in point of morality, with the greatest circumspection, and thereby to present to him the moral law, as if it were by intuition.

Let every mother, by PRACTICE as well as precept, endeavour to give all possible encouragement to morality; for the child has not only a quick ear, but also a quicker *eye* than we generally believe. To preserve the child's heart and imagination pure and undefiled, is (*c*) a third means of attaining this end; this is not to be done, except the children live constantly with their parents. Why should parents banish children from their tables, and not allow them to take their meals with them? Or, why should they deprive themselves of the pleasure of their company during any part of the day? The parents must, of course, prescribe to themselves a noble simplicity in the regulation of their table, resolutely discountenance all uncharitable and unprofitable discussions, and introduce such topics only as will tend to promote moral and intellectual improvement.

(*d*) Great precaution is necessary in the

choice of companions, and no book should be allowed, of the morality of which a mother is not perfectly satisfied, after a scrupulous examination; their minds and bodies should be kept in constant activity, partly by instruction, partly by gymnastic and other corporeal exercises and amusements.

Keeping a child always employed, is guarding him from all sorts of evil thoughts and mischievous tricks. Besides this, it will procure him a sound and tranquil sleep, in which however he ought not to be suffered to indulge beyond what is necessary, but be made to rise every morning the moment he is awake.

(*e*) This moral principle may be still further strengthened, by accustoming children to a strict and unconditional obedience, not founded on arguments, but solely on the word and command of the mother, for which, however, she must have sufficient reasons.

(*f*) By giving them a habit of punctually fulfilling their daily duties; of respecting other people's property, and particularly the property (however intrinsically trifling) of their young companions; of kindly supporting their feeble infant brothers and sisters;

of voluntarily renouncing and denying themselves comforts and amusements, in order to acquire in time a certain degree of self-command and mastership over themselves; but all directions will be utterly thrown away, unless *the child pass the day under the active superintendance of the mother, or of some intelligent relation* residing in the family, and *participating* with the mother in its welfare.

This is a truth demonstrated by experience. Wo to the mother who is obliged to abandon her children during the greater part of the day to domestics and hirelings,—no, not obliged—there is no duty so imperious, no social convenience, or fashionable custom so commanding, as to oblige her; *for maternal care precedes all other duties.* Let me therefore say, wo to the mother who voluntarily abandons and confides her little ones during the better part of the day to hirelings!

She may for ever renounce the sacred and delightful task of educating them to morality, of rearing up in their hearts the sanctuary of virtue; she may leave them to her domestics, or to her governess, and cease to be a mother in every sense of the word! Let none ima-

gine that *giving birth to children gives a title to the honourable name of* MOTHER! No; none can claim it but she who has endeavoured to gain from her child the *fulness of love, faith, and gratitude.*

To every unnatural mother these endearing affections of her children's hearts are lost, and, to her shame, lavished on the nurse, on the governess, or any other person who is most occupied with them, who best nurses, entertains, and instructs them, and from whom they experience most acts of kindness and benevolence. With the loss of the child's affections the mother also loses her claim to that unconditional obedience, which, if not founded upon the purest sentiments of humanity, will change into a kind of despotism, paralyzing and deadening every moral principle.

Thus a mother, from want of observing and superintending her child, will lose all influence over him, and continually be at a loss in choosing means best adapted for fostering and cultivating the principles of morality within him. "Alas! thou poor and abandoned child! She who gave thee birth is alive, and yet thou hast no mother!"——Thus

every friend to humanity might exclaim, when seeing a child less attached to his mother than to his nurse! Yes! and this is a truth undeniable. Although a mother should introduce the most approved methods of education and instruction into her family, with all the Pestalozzian forms and exercises, and could abandon and intrust them during the greater part of the day and every day to hirelings, she would have the appearance of a good mother indeed, but be far from being one in reality. Nor would a mother, who prefers the allurements of the world to maternal duty, be able to excite in her children religious sentiments, which however she alone *can* do, and therefore ought to do.

Religious principles, according to the nature of the human soul and of religion itself, must be excited and cultivated in the manner following.

(*a*) *Gratitude, faith,* and *love,* towards the mother, are excited within the child, through acts of kindness and love. By means of them, the mother appears to him as a higher, but, at the same time, as a benevolent power, as a moral being; she consequently becomes to him a representative of the Deity, before

he knows the Deity, and these sentiments constitute, what may be called, the elements of religion. The mother, in the like manner, excites the moral sentiments of the child towards the father.

(*b*) From the moment it appears that the child is really conscious of this love for his earthly parents, the *name* of *God* is mentioned to him as the common father of all, to whom both his father and mother are indebted for all the good things they possess. This must be done in some appropriate and solemn hour, when the mother's heart is overflowing with love and affection.

(*c*) From this moment, every agreeable occurrence or propitious event, every gift, every physical and spiritual blessing, is attributed to God. Each time he has performed some good and moral deed, the child is reminded of God; for any sort of succour, protection, comfort, and bounty, thanks are rendered to God, in the presence of the child, from the fulness of the heart. The mother prays now and then, in an unaffected manner, before him, shewing him, by every one of her words and actions, that nothing is, or can remain, hidden before God.

(*d*) As soon as this impression is made, she begins to mention the name of Jesus Christ, speaking of him as of the most perfect pattern of every virtue, as of a being animated with the purest sentiments of filial love, obedience, and submission. The mother tells him, that she herself is far from being what she ought to be, but that she is striving to become so, and that Jesus is to be her pattern for imitation.

She takes care to describe him to the child, as the greatest benefactor to mankind, and imparts to him the history of his life and deeds, as far as is necessary to prove it. This is done in some hallowed and tranquil moment, with all the effusion of endearing maternal love. Those solemn hours, in which the mother has dwelt on this subject, must make such an impression on his mind, that the recollection of them, even in a more advanced period of life, will prove most gratifying. She must shew the most sincere and unfeigned interest for Jesus, as the model of all perfection, who, inseparably united to, and in perfect harmony with God, was sent on earth to do good, and to save us; who, in one word, is to be to mankind what a good and

affectionate mother is to her child. The greater interest and warmth the mother manifests for the Saviour, the easier will she interest and warm the child's heart; the more she is herself impressed by religious feeling, the more successfully will she inspire him with similar sentiments, and without it—never! Not enough to profess religious sentiments, to feel an interest in the Deity, in Jesus Christ, in his life and atonement; no, the mother must also manifest them before the child.

But, alas! why is it that one beholds so frequently children quite cool and indifferent towards the holy precepts and doctrines of our religion? It is, because mothers set them the example, and bend their hearts more towards earthly than heavenly objects.

May any such mother tremble at the moment when her own child will rise up against and reprove her for this inexcusable neglect. Better for her she tremble now, than hereafter!

As to the historical part of the Bible, the following hints, I hope, will be found useful.

1. She must keep her children as long as

possible in Paradise, or in a world of innocence, where sin is unknown, and, consequently, omit all such histories as give an account of bad men and wicked deeds.

2. When she has fixed upon some, which she considers as fit to be related, she gives them to the children, minutely detailing all little circumstances, which she must endeavour to make as intuitive as possible, so as to excite the child's interest, and to fix his whole attention.

3. As soon as she has finished a history, she desires the child to relate it in his turn, yet without forcing him if he should not be inclined.

Far more advisable would it be to encourage him to relate it to one of his younger brothers, sisters, or companions, as in this manner it would have less the appearance or character of a lesson.

4. After a while, when sin and perverseness can no longer be kept concealed from the child, she shews him the dreadful consequences of disobedience, and all the evils that have arisen from perverse desires and passions in the histories of wicked men; and,

5. Lastly, is he to be made acquainted with the plan of the entire, the mother shewing him the intimate and palpable connexion between the Old and New Testament, and in particular, how a series of prophecies of the former have been minutely accomplished throughout the history, life, and death of that *high* and *mighty person,* who brought light into the world, and who is the theme of the latter.

Thus far have I endeavoured to give some idea of maternal instruction, or, as the venerable Pestalozzi, the children's friend, calls it, the instruction of the *fireside or domestic circle,* a most important period of the child's life.

In order gradually to exterminate the evils which have arisen from neglected or perverted education, a different course must be pursued. Children from their earliest age must no longer be treated with disregard and carelessness, but considered as beings holding a high rank in creation; beings endowed with the heavenly spark of reason, which in the *domestic* circle should be fostered by the united efforts of the father, mother, elder bro-

thers and sisters, so as to embrace the *whole* child, or, in PESTALOZZI's words, to engage at once the powers of HAND, HEAD, and HEART.

May this invaluable sentiment be duly *appreciated*, and ACTED upon.

THE END.

J. G. BARNARD,
Skinner Street, London.

[No. II.

HINTS TO MOTHERS.

EXERCISES

FOR

EXCITING THE ATTENTION,

AND STRENGTHENING THE

THINKING POWERS OF CHILDREN,

IN THE

SPIRIT OF PESTALOZZI'S METHOD.

BY

A FOREIGNER,

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INFANT cultivation, according to Pestalozzi, can only be successfully undertaken by Parents.

Human improvement must begin through *Mothers;* it is through them, principally, as far as human agency is concerned, that those evils can be PREVENTED, which, age after age, we have been vainly endeavouring to *cure.*

Many mothers may consider the performance of their sacred maternal duties as too difficult, too irksome an undertaking; they have been so enfeebled, so degraded, by their education, that it will require a strong effort on their part, to assume the necessary cou-

rage, properly to use the powers, with which nature has invested them.

Many may consider it a matter of small moment, with whom, or in what manner, the early years of childhood are passed: that patience and good nature are *alone* requisite, in the management of infants; and that the nurse is the most proper person to be intrusted with them. Had these mothers, in their infancy, not been left under such guidance; had their hearts and their minds been purified, elevated, and rightly directed, they could not have entertained these mistaken, paralyzing, and most pernicious notions. They would have proved, by experience, that the part assigned to them, though difficult, is yet delightful: they would have learned that the proper development of the infant, requires powers, and virtues, and an enlightened never-failing love, of which a parent only is capable.

But a perverted education has rendered the generality of mothers equally insensible to the evils to which they expose their children, as to the humiliation of placing themselves under the direction of nurses and governesses: of allowing them to usurp the post, and to fulfil

the sacred and honourable duties, which *parents* ought to consider as their inalienable right, and their dearest privilege.

This perverted education has *robbed* them of the fulness of happiness; of their children, their home, their earthly paradise: of the blessedness, the internal blessedness, a mother *should* feel, in unfolding the powers of the young Immortals committed to her charge.

All this, PESTALOZZI would restore: he would RAISE mothers to a state that would fit them for the performance of their duty; instead of so qualifying their duty, as to LOWER it to their now debased artificial state, to their *misdirected* pleasures in worldly objects.

Parents! impressed with the TRUTH of the fundamental Pestalozzian principle, that Females may, under RIGHT guidance, through Divine Grace, become instruments of extensive improvement, and of permanent good; no longer sacrifice your Daughters at the low shrine of fashionable folly!

PERSONALLY apply yourselves to their *right* education! Prove your love to those Beings for whose future fate YOU are deeply responsible, by unceasingly devoting your best en-

deavours, towards rendering them intelligent, rational, useful, and happy.

In the development of children, the first step is to AWAKEN: but let mothers ever keep in mind that development must be gentle, gradual; progress imperceptible. Let them beware of forcing, what nature intended should only be brought to perfection in a long course of years. Nevertheless, let them not slumber; but let them, from the earliest period, avail themselves of all surrounding objects, and circumstances, and passing occurrences, to awaken and to strengthen the infant powers; to give moral impressions; and to cherish religious feelings.

The following hints are principally intended to suggest that, to the tender and vigilant mother, incessant opportunities will present themselves for this purpose.

During the intervals of their more active employments, the mother points out to her little ones some object, or invites them to examine with her some print in regard to which she proposes short questions.

She carefully avoids letting them pass too rapidly from one object, or from one print to

another; but arranges her questions so as to fix their attention to each of them for a time, and to encourage them to find out, and to mention in succession, whatever is to be seen in the object before them. For instance: What do you see at the top of this print? what below? what at the right? at the left? in the middle?

What do you perceive about the tree, here represented? and what do you observe about this house? about the roof of the house? shew me the door of the house. How many windows has it? are they large or small? do you see any thing else in the picture? I see something more at the top of it; at the right side also there is still something to be noticed, what is it?

When every thing has been pointed out, the print is removed, and the mother asks Do you remember, and can you recapitulate, whatever you have seen?

It is desirable that these exercises should be short, with frequent intermissions: She now sends them to run for a few minutes, or desires them to bring something from another room, &c. &c.

At another opportunity she draws the child's

attention to such objects as may be near him, asking: What do you see in this room more than once? name any thing in this room that is hard, soft, heavy, light, large, small, green, red, white, black, &c. Name the things in this room, that you cannot carry away. Which are the largest? which the heaviest? Name the parts of your hand: of your clothes: of this book: this window: this door, &c.

Describe the situation of your forehead, and say between what parts of your head it lies, what parts it has above, below, on each side; how it is shaped, &c.

Questions like these, ought to be made in a slow, and regular succession; and the children be allowed *time* to THINK; the mother ought neither to hurry away from, nor dwell too long upon an object; she ought to keep in view the natural disposition of children, towards variety; yet, without either encouraging it, or creating confusion, in their feeble minds.

In some moment, of apparent vacuity, the mother may thus address them: Children, attend to what I am going to say; and I am curious to see, who will be able to repeat it, in the same order: In farm-yards, may be

seen, horses, oxen, cows, sheep, hogs; geese, ducks, and hens.

In *beginning* to exercise the attention, the memory, and the speech, of little children, it will be requisite to break the sentences into parts; the mother letting the little ones repeat each part after her, thus: In farm-yards; in farm-yards may be seen; in farm-yards may be seen horses, and so on; letting the sentence gradually increase by a fresh object at each repetition; and even after the children have arrived by frequent practice, during a long course of time, at a certain degree of strength of memory, and of facility of speech, let them, upon no account, be allowed to *hurry over without* THOUGHT, any sentence, however apparently trifling. The so doing, instead of aiding their farther advance, would have a directly contrary effect; and totally destroy the spirit and the value of exercises of this nature.

I earnestly advise mothers to train the elder children to exercise their younger brothers and sisters in this manner; the advantage will be mutual and great in every point of view.

When the children have repeated a sen-

tence, they may be led to put various questions to each other.

Now listen to me attentively; I am going to say something new:

"High, in the air, above us, fly swallows, larks, pigeons, sparrows, rooks, and crows."

How many birds have I named? which did I name first? and which last? Have I named any birds before these?

In the water, swim pike, eels, carp, trout, herrings, and many other fishes.

Who can repeat this?

On the tree, I see boughs, branches, leaves, blossoms, and fruit. Is this all that is to be seen on a tree? Who can mention something else, appertaining to a tree?

Now repeat after me the following proper names: "Charles, Augustus, William, Henry, Francis, Frederic, and George." I shall say them again; and then you will, perhaps, be able to mention the third, and the sixth.

I now shall name to you different sorts of fruit. What am I going to name? What have you to do? The mother names them in succession; and then asks: Have you retained them? Consider now well; and then mention

which things I made you repeat first; and which last?

At another time, while the children are standing round her, the mother may say: Now, you shall tell me, and distinctly pronounce, whatever you see me do.

The mother lays her hand upon the table; lifts it up; opens it, closes it; lays hold of something, touches something, &c. She draws several lines, of different length; some above; others below; in the centre; at the right and left side; and asks: What do you see? where do you perceive a long, and where a short, line? Where are three, and where four lines, near each other?

Where is a crooked, and where a straight line? Have you any recollection of the things you saw yesterday, in the picture? What sort of fishes did I name to you to-day? what birds? what fruits? and what other objects?

Now, repeat after me, such things as I shall mention to you: The square table; the round table; the oblong table; the pointed needle; the blunt needle; the round hat, the long bench, the short bench. The hooked knife; the sharp knife, the blunt knife; the clear water, the turbid muddy water; the salt water.

The heavy stone, the smooth stone, the precious stone, &c.—which thing did I call heavy? which sharp? which round? which blunt? which turbid? which long?

In this manner may be treated, the following objects: the ripe pear; the sweet fig; the bitter almond; the juicy grape; the acid lemon.

Now, tell me first, the names of the fruits I have mentioned. What did I say of the pear? and what of the fig, &c.?

The sloping roof; the broad gate; the vaulted cellar; the spacious room; the ripe fruit; the polished steel. What did I call spacious? what vaulted, &c.?

The crowing cock; the cackling goose; the swimming fish; the bleating lamb; the twittering swallow; the barking dog; the lowing ox. To ascertain whether they have paid attention to the appropriate epithets, they may be asked, how did I represent the lamb? and how the dog? the fish, &c.?

Here is a knife; look at it attentively, and tell me? what do you see about the upper part? what about the lower part? what in the middle? Do you know any other thing which has a point?—She may vary the lesson thus:

Look at this book, in what position do you see it? how is it now? (open.) And how now? (closed:) and now? (it stands upright). But now? (falling.) What have the scissors, and the pin? Whither have I thrown the pin? and whither now? Is this pin straight or crooked? Is this pin sharp pointed or blunt?

When the mother is at work; mark now attentively, what I am doing with the scissors: (to cut, to cut off, to shape, to divide.) And what with the knife? and what with the handkerchief? (to fold up, to unfold, to drop, to take up, to put by.) And what with this piece of paper?

I am going to say something; notice the word on which I lay a stress, and mention that word. "In this garden is a *delightful* perfume of roses."

"In our garden all the cherry trees are in ful blossom."

Attend now, I shall pronounce three sentences upon the same subject; adding one word more to the second than there was in the first, and one word more to the third than there was in the second.

This garden belongs to a good man. This *beautiful* garden belongs to a good man. This *very* beautiful garden belongs to a good man.

Take notice, that as often as I pause, I have spoken a sentence. How many times did I pause? how many sentences, therefore, did I pronounce? which was the first sentence? what word did I add to the second, and what to the third?

Attend now to the following sentences.

A sheep is a gentle animal.

A sheep is a very gentle animal.

A sheep is a very gentle and useful animal.

"Good children are obedient to their parents.

"Good children are always obedient to their parents.

"Good children are *gladly* and *willingly* obedient to their parents."

The oak has strong boughs and branches. The oak has a large trunk, and strong boughs and branches.

The oak has a very large trunk, &c.

Now, I shall repeat the names of several

animals, in three sentences; adding a new animal to each sentence.

In the forest live deer, stags, hares, and wild boars. In the forest live deer, stags, hares, wild boars, and *foxes*.

In the forest live deer, stags, hares, wild boars, foxes, and *wolves*.

Which animal have I added to the second, and which to the third sentence?

Which animals did the first sentence contain?

Let us try something similar, in four sentences. In rivers live pike, carp, and tench. In rivers live pike, carp, tench, trout, and perch. In rivers live pike, carp, tench, trout, perch, and salmon.

Which name have I added to the second sentences, &c. &c.?

Listen: "Farmer Thoroughgood had seven children, four boys and three girls. The names of the boys were, George, William, Richard, and Henry. Those of the girls, Mary, Elizabeth, and Ann." How many sons had he, and how many daughters? How did I call the boys, and how the girls? Name the boys now in the inverse order, so that the first will be the last.

I visited a sportsman, and saw suspended on the walls of his room, fowling-pieces, pouches, powder-horns, and antlers. Before the door were two hares, one pheasant, one snipe, three partridges, a wild duck, and a dozen larks. Do you think these animals were dead or alive? Why do you think they were dead? Who most likely killed them? and with what? what for? where?

Name all these animals, and then say which of them is the largest, and which the smallest, &c.

Huntsman Dashwood had six hounds, which he named "Snap, Fly, Swift, Leo, Castor, and Brush." Which of you has retained all these names? Which of these hounds did I name first, and which last?

The mother may observe that hunting is a remnant of barbarism, and that she has hopes their education will enable them to find a more rational and profitable exercise for mind and body.

In the market place stood a man with a large cage, in which he had the following birds; a quail, a nightingale, a lark, a bull-finch, a pigeon, and a goldfinch. What were the names of the birds the man had?

There was also a woman with ten baskets about her, in the baskets were, currants, cherries, gooseberries, strawberries, and raspberries. Another woman had baskets filled with cabbage, turnips, lettuce, spinage, celery, and onions. A third woman had ducks, geese, fowls, pigeons, and turkeys.

Little Charles had made a collection of various productions of nature: of butterflies, beetles, lady-birds, shells, snails, and stones.

On a fine day in spring, I went into the garden, and saw tulips, hyacinths, primroses, auriculas, lilies, and snowdrops.

In the garden were children, one of whom repeated the following verse of a hymn taught him by his mamma.

"Lord! how thy wonders are display'd
Where'er I turn mine eye!
If I survey the ground I tread,
Or gaze upon the sky!"

Try now, whether you can recollect and say the names of the birds, fishes, and flowers, mentioned by me before dinner.

Do you remember the articles which the women in the market-place had for sale?

Fix your attention to the following num-

bers, and try to repeat them in the same order as they are spoken by me:

8, 7, 5, 3, 1, 6, 4, 2, 9.

Pay attention to some words I am now going to pronounce.

Gold-beater, gold-smith, gold-finch, stone-cutter, stone-fruit, stone-pit, wood-cock, wood-land, wood-man, wood-pecker, wood-pigeon, &c.

Did you notice that every word I have mentioned consisted of two words, and that several words commenced in the same manner? with what words did they commence? what smith have I mentioned? what sort of fruit? what kind of pigeon? which of those words referred to men? which to animals? which to inanimate objects? repeat those which began with *gold*. Those that were compounded with stone, &c.

To try their powers of observation and memory, she may ask, Can you tell me in what place you have seen thorns? where mangers—ditches—bridges—oars, and anchors, &c.?

Name things which have wheels fixed to them. What do you call the machine which has but one wheel? that which has two wheels?

do you know any which has three wheels? others that have four wheels? what animal has wings? what animal is covered with feathers? can you name any with horns? what animals have you seen swimming? which slowly creeping? which undermine and live in the earth? where did you see nests? name some sweet smelling flowers. Mention different sorts of wood, which we burn as fuel.

Prints, with short accounts of the different trades, may advantageously form part of the childrens' amusement; and, as opportunities occur, they should be shewn the works actually going on.

Name the instruments and tools that are used by the carpenter, the mason, the shoemaker, the smith, the gardener, the turner, the farmer, &c.

Who employs the ax? who the pruning knife? who the ell? who the saw? whom do you see working in the water? whom close to the water, &c.? who works in the depth of the earth, and who high up in the air? who works walking, who standing, who sitting? who in the forest, &c.? whom do you hear working at some distance?

Exercises of this nature should not be extended to a length, requiring, on the part of small children, a degree of attention of which they are incapable.

The first exercises of this kind are intended principally to AWAKEN the mind of the child, and to lead him to more prolonged *attention* and greater *observation*.

For this purpose, questions on various objects in *nature*, are by far preferable to long protracted conversations; for they fix the attention, and inspire the child, who is naturally fond of variety, with a *desire* for instruction. They elicit the exertion of his *thinking* powers, and yet demand nothing but what he is able to perform; they expand the circle of his knowledge, and make him conscious that he knows something. Hence, the more frequently parents afford their young pupils an opportunity of recollecting what they have learned, and what they have seen, the more they increase the store of their language, and rectify it; and the more patience and indulgence they exhibit in going through these exercises, the greater will be the success of their labours.

Think of that animal which carries its house

on its back: of those who never walk, but only hop: of those which have many small bones: of a bird which crows; of another which sings; of those which lay eatable eggs: of an animal which lives in the earth; of another which gnaws every thing: of one which sees best in the dark: of those that spoil and corrupt meat; and of such as consume your clothes, &c.

Think of that animal which has a long proboscis or trunk, and name it: of that which has two hunches on its back: of that which has long legs and a long neck, &c.

Recollect the names of the coins which you know: of the materials of which your clothes are made: of several sorts of leather: the names of musical instruments: of different sorts of vehicles, &c.

What do you see about the window, on the table, on the watch, on the lock of the door?

What do you observe about a tree, a flower, a vine, a rose? what do you see on the wall by candle-light? what on a summer's morning? (dew:) what on a winter's day? towards night? (sunset, workmen returning home.) What do you see on the walks and roads, after a long drought? (dust:) what do you see on a

bird which a dog has not? on cows? on sheep? on hogs? what do you see near flocks and herds? (shepherds, dogs:) what in a forge? on a steeple?

If a tree were represented, the following questions would excite the child's attention:

What do you see on this tree? do you always see leaves on a tree? do you see strong boughs on every tree? what do you see on trees in spring? and what in autumn? can you also name a part of a tree which is not seen? which is the highest, and which the lowest part of the tree? where do trees grow? in the garden only? what animals rest on trees? none but these? name some flowers you have seen in the garden, and others you have seen in the fields.

Separate pictures on pasteboard are very useful, and may occasionally be placed before the child in rows, when he may be asked, How many rows of pictures do you see before you? which is the upper, which the middle, which the third, the fourth, and which the last or lower row? what does the third picture of the second row represent? what the last picture of the first, the fifth picture of the third row?

In order to exercise the eye together with the attention, the mother draws, with a piece of chalk, a line on the table, asking, What have I done? She then draws one shorter, and some longer lines, &c. and asks:

What do you notice of these lines?

She then draws a curve line, after this a circle, then a square; divides one line into 2, 3, 4, or 5 parts, and the other lines also, and makes the children observe the difference between the parts, &c.

She then desires the children to shut their eyes, or to turn about; effaces some of the lines or figures, and makes them find out, which of them has been effaced. She shortens several lines, and lengthens others, asking, What have I done? She effaces them entirely, and renews them again in a greater number.

She now turns the board or slate so, that the children see only the blank side, and desires them to mention the figures or lines, in the order in which they are drawn on the board.

These two lines, which I am now drawing from the left to the right, and which do not decline either way, but appear level with the

floor, I shall call horizontal lines. What did I call them? I now have made a new line: is it like the former? It comes down in a straight direction, like a stone which falls to the ground, and I shall call it a perpendicular line.

But what name would you give to this third line, which is neither horizontal nor perpendicular? (a sloping or oblique line.)

What lines have I drawn now? (two horizontal lines.) Do they approach or touch each other, or are they equally distant? We will name them, therefore, parallel lines.

But what do you observe of these two? (they bend or incline on one side towards each other.) And what on the opposite side? (they run or decline from each other.) They are called lines not running parallel, &c.

Should the mother at any time hear any little disputes, or the children making too much noise, she may recall them to order, by desiring them to describe the geography of their gardens—situation—extent—form—aspect—soil—culture and produce; or describe the interior of the house, or by what marks can you recognise its exterior, &c.

Could you recognise a house by a waggon

placed before it? why not? by a tree before it? do you see windows and doors in every house? what do you call the highest, and the lowest part of the house? what do you call that channel, which runs from the bottom of the house to the top, and rises above the roof? &c. &c.

Questions like the following may be asked, as an introduction to the knowledge and the value of the senses.

How do you know that animal is creeping? that bird flying? that insect hopping? how do you know the snow is falling? that that man is mowing? another sowing? &c.

Can you *see* the wind? can you *see* thunder?

But how would you discover what is acid or bitter? &c. Can you distinguish by any other sense than seeing, an orange from a lemon? a rose from a carnation? a walnut leaf from a geranium?

Can you perceive, by your *sight*, whether a plate be hot or cold? &c.

Those things with which an artificer works, are called tools or instruments. Which are the instruments of seeing? hearing? smelling, and tasting? are these instruments equally

perfect in every person? what persons are deprived of some of them? what is our duty towards such persons? what does a blind man suffer? of what enjoyments is he deprived? what magnificent and sublime sight is withdrawn from him? what acquirements can he never attain? by what does he distinguish one man from another? of what can a blind man form no idea? of what enjoyments are the deaf deprived? by what means only can you make them understand you? what is the reason that those born deaf, are dumb at the same time?

Do you enjoy all your senses in perfection? do you consider to whom you are indebted for this great blessing?

Do you endeavour to shew your gratitude, by making a right use of the gift?

In taking notice of objects in nature, and from them raising your affections to the Creator, are you making a good use of the blessing of sight? &c.

When children listen to the advice of their parents, and endeavour to profit by it, do they make use of the gift of hearing in a manner pleasing to the Giver?

Was it by observing and listening to others wiser than yourself, that you have learned all you know? &c.

Have you ever reflected how much your senses contribute to your happiness?

Should you greatly feel the want of any of them? &c. &c.

Do you love the Being who has enabled you to see, to hear, to understand, to enjoy? &c.

Let the mother never forget, that such questions are not to follow in a string; but to be judiciously, tenderly, and opportunely administered, in such proportions as will not fatigue.

Who sows, saws, digs, drives, rows, kneads, files? who boils what cannot be eaten? (he who boils whale's oil, soap, tar.)

The mother will use her discretion in fixing the number of answers to be given: for instance, Name two persons who sow: name things that are brilliant, soft, hard, narrow, broad, precious, cheap, scarce, common.

What brilliant object do you see in winter only? what soft thing may once have been hard? what hard thing may once have been soft? what can be sharp besides knives, scissors, and swords? (a sharp reproof, &c.)

what is great towards evening, and small at noon? what is the most precious thing on earth, which, when once lost, cannot be recovered? (Time.)

Are things to be purchased by money only? If a rich man spend four hours at table, because he delights in eating and drinking, does this enjoyment cost him his money only?

If a young girl dances so immoderately as to fall sick, with what did she pay for this amusement? If you wish to enjoy a beautiful view from a high mountain or tower, what must you do for it? Is it to be purchased? But if, after long and troublesome ascending, you had arrived at the top, what would you feel in your body, and particularly in your legs? With what then would you purchase this enjoyment?

How can children pay their parents for all the instruction which they have received from them? &c.

Can they pay them with money, with clothes, with food, or can they purchase for them any thing they wish to possess? &c.

But is it in the power of children to be attentive? obedient? affectionate? and grateful? &c.

Do you not think that this is a payment which parents would willingly accept? and that it would much contribute to their happiness? &c.

Ought not children to think of all that their parents are constantly doing for them?

Ought they not to listen to them with attention and thankfulness? &c.

Do you not think that God will approve and bless those little ones who keep his commandment, by honouring those whom he has made instruments of good to them? and will not this blessing gladden the heart of parents, who are so deeply anxious for the welfare of their children? &c. &c.

The mother will of course not formally catechize her children by rote upon each of these moral and religious questions in succession, or even upon every part of any *one* of these questions; but will patiently wait, and according to the answer vary her question, or conclude the conversation, keeping in mind the necessity of renewing it at every favourable opportunity, if only by a single word. Let her in the management of her children ever recollect that morality and religion should be *practical—personal,* interwoven with every

pursuit, and not merely given in set lessons, to be laid aside as soon as the lesson is over.

What is burnt? what toasted? boiled? roasted? What is pounded? rolled? dyed? dried?

Questions of this kind ought not to succeed each other rapidly; and the mother may assist the feeble and less advanced by such illustrating questions as may lead to a second and a third answer.

Who runs? a cheerfully obedient boy, when his mamma calls him. Would you rather have a part of an apple, or a whole one? which is larger? which is smaller than the whole? What do you call a man who can make an artificial work? who dislikes working? who will not wait? who will not obey? who cannot hear and speak? who cannot see at a distance? who is fond of working? who returns from a journey? who always looks out for more? who has more than he wants? who is fond of speaking? who speaks elegantly? who is easily frightened? who finds pleasure in serving his fellow-creatures? who can endure great heat or cold? who can bear no fatigue and exertion? &c.

Some of the following questions have a reference to the preceding exercises.

When is a man most in want of assistance? when is the firmament or sky most brilliant? when most awful? Which part of the house is sloping? which vaulted? which spacious and lofty? what building is high and pointed?

What part of the house is fire-proof? what can be done with a whole? If an apple be divided into two parts, a second apple into four, and a third into eight parts, which parts will be the largest, those of the first, of the second, or of the third apple?

What does the idler detest, and what the impatient dislike? what do the industrious not shun? what causes weariness? (want of useful employment.) Who is talkative? whom do we call a coward? whom do you call stout and robust? how should a child feel after having behaved ill? (ashamed, sorry;) how should he feel after being reproved, and put in the right way? (thankful;) what should you call a well-educated child? (diligent, fond of learning, obliging, modest, obedient;) what should you say of a lion, and of a dog? of a lamb, of a wolf? of a snail, of a deer? of the juice of a sloe and that of a fig? of the wood of a fir-tree, and that of an oak? What is the ap-

pearance of nature in spring, and what in winter? &c.

If you wish to know what is the height from the floor to the ceiling, what would you be obliged to measure?

Describe the situation of this room; mention by what it is bounded on each side, in what story, or on what floor, and whether in the front or back part of the house.

Describe the yard; for instance, the stables, barns, poultry houses, offices, its entrance and outlets, its boundaries, figure, and dimensions, whether the surface be even or uneven, elevated or low, paved or unpaved, &c.

Give a description of a garden well known to you, stating its boundaries, the direction of its principal walks, whether they run parallel, or whether they cross each other; the smaller paths that branch out from them, the position of its trees, and of what sort, the form of its beds, &c.

At table, a variety of useful questions may be asked, leading to instructive and interesting conversations. Of what is bread made? can you mention the different operations necessary to be performed before a loaf is

brought to the table? what share in it has the farmer, the labourer, the miller? &c.

But who sends rain after the corn is sown, and makes the sun shine to ripen it? Who sends fruitful seasons, filling our hearts with joy and gladness? &c.

What implements are used? Are any animals employed? &c. &c.

Who can mention the different colours on the table? Who can name them in Greek, in Latin, in German, in French, &c.

What do you observe rising from the urn? What is on the inside of the lid of the tea-pot? &c. Who can mention the animal, vegetable, mineral productions on the table? &c.

Is there any thing solid on the table, that on being put into a fluid, would gradually dissolve, and entirely disappear?

Where does it come from? Did you ever hear that many hardships are suffered by the people who are employed to cultivate the sugar plantations?

That they are in a state of slavery?

Do you think that they are as happy as the labourers in England?

William can tell you Mrs. Sherwood's his-

tory of little Dazee, which interested him so much last year.

I have heard of some little boys and girls giving up the use of sugar when they were told how cruelly the poor negroes were treated.

Did you ever hear of any plans being proposed for their relief?

Did you ever hear the name of Wilberforce?

Remind me this evening, and I will tell you what pains this great and good man took to lessen their misery.

You shall at some future time hear some passages from Clarkson's interesting account of the labour, money and time bestowed; and the opposition encountered, by the friends of humanity, in their efforts to procure the abolition of this disgraceful traffic, &c. &c.

At dinner and at supper our young companions may be encouraged to give an account of the morning and evening occupations; what they have learned, what observations they made during a walk; the birds, the plants, the trees, the wild flowers, the leaves, the stones, the insects, the fields, &c. that engaged their attention; the employments in their exercise ground, the progress of their

gardens; the performances of their workshop, &c. &c.

The elder ones may be led kindly to question the younger: to feel pleasure in their improvement and success; to delight in assisting them on every occasion, &c.

Should any of the children have passed unobserved an object or circumstance which afforded matter of reflection and pleasure to the others, the excellent story of "Eyes and no Eyes;" in "Evenings at Home," may be good humouredly mentioned, and furnish a fund of useful and entertaining developing questions for head and heart, &c.

It is of no small importance to accustom children, at table, from an early age, to feel pleasure in listening to, and taking their share in useful subjects.

When this habit is established, they will not, in future, wish for the society of those, whose ideas, and whose conversation, rise no higher than the discussion of the various dishes; the merits or demerits of modes of cookery; suitable sauces, &c. &c. much les will they feel any inclination to *join* in topics, which, however appropriate to the kitchen, they will feel to be not quite so to the parlour.

Teach them by precept, but above all, by unvarying *example*, to consider their meals as a necessary refreshment for the body, but as by no means worthy to occupy the mind. Let parents, instead of encouraging, omit no opportunity of keeping in subjection, the animal propensities; on every occasion, let them be mindful to raise and to cherish the spiritual affections of our nature.

Instruction, thus imparted, becomes daily more interesting to the child; for, now he conceives and embraces things with more facility and accuracy; and is not embarrassed in giving words to his thoughts; he has gained a certain degree of strength, and does not hesitate at every answer which he is to give; giddiness and distraction, so common to young children, he has nearly conquered; and thus he amply rewards the patience and judicious kindness which have successfully developed his early powers.

These exercises are not intended to be regularly gone through, to be followed blindly, or administered mechanically, but are merely given as *hints* to mothers, how they may profitably direct the attention of children.

The little ones should not only be allowed,

but encouraged, on all occasions, to ask for explanation of every word, and of every sentiment not perfectly understood: they should have liberty to state the impression produced upon their minds and feelings by persons and things.

Let mothers particularly attend to this suggestion; not only because such permission will create a *desire* for instruction, and because it will afford opportunities of correcting such ideas as may be erroneous, and of confirming such as are just; but because, in the domestic circle alone, can this privilege be enjoyed.

The system of education, to which children are generally subjected, upon leaving the parental roof, does not often admit of the least interruption of the regular lesson, however ignorant the children may feel of the meaning of what they are required to pronounce, and to treasure in their memory as a fact. The effect of this privation may be seen, at the moment, in the weary and vacant countenances of the pupils; a result still more lamentable is, the facility with which, in future life, they allow themselves to be carried along by custom, by fashion, or by a *weak* dread of

RIDICULE: they feel the exertion of *thinking* too great; to form, and to act upon an opinion of their own, requires, they find, more strength of mind than they have been accustomed to exert; they therefore remain satisfied to regulate their conduct, to form their habits, and to estimate their happiness, by the opinion of others.

Parents! let your daily lesson to your children be, THINK ALWAYS, and THINK FOR YOURSELVES.

Attention unrelaxing should be paid to every shade of effect produced on the minds and hearts of the children; and discriminating tenderness and delicacy will vary the measures accordingly. However excellent may be the theory, which has for its object, a gradual and proper development of the infant faculties, and however well adapted to that end may be the *matter* of the exercises, *success* must depend on the *administration*. It must not be rigid—It must not be languid—but the whole must flow from the pure source of never-failing charity.

Should the little ones evince a dislike to their exercises, return to them with evident reluctance, and quit them with joy, let the

mother look within HERSELF, for the cause; she may have kept to the strict *letter* of the Pestalozzian system, but she has not seized the SPIRIT: but let her not be discouraged. Let her beware of abandoning her duty, by weakly giving way either to despair or to weariness. Let her persevere.—Is she not a mother? and whose powers of developing the infant faculties are so well *founded* as a mother's? Are they not founded upon *love?* and upon no other foundation can there be a right development of the infant faculties.

Other instructors act on the *surface* of the Being. The mother acts on the HEART; and out of the heart alone, all true development springs.

THE END.

J. G. Barnard, Skinner Street, London.

[No. III.

HINTS TO MOTHERS.

FIRST EXERCISES

IN

NUMBER;

OR,

THE ELEMENTS OF ARITHMETIC

VISIBLY REPRESENTED

IN THE

SPIRIT OF PESTALOZZI'S METHOD.

LONDON:

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[TO BE CONTINUED.]

J. G. Barnard, 57, Skinner-street.

HINTS

TO

MOTHERS.

THE difficulty of providing *rational* and agreeable employment for very young children, is a general subject of complaint. This difficulty, it is presumed, would not be found insuperable, could PARENTS be induced to devote their time and their powers to a province peculiarly their own.

The more entirely a mother gives herself up to the discharge of duties for which she is eminently qualified; to the sacred task of watching and assisting the development of the minds and hearts of her infants, the greater will be her success, and the more perfect her happiness. It is from perseverance that she

must look for strength: she will learn more from hourly observation, and instruction of her children, than from the study of the best treatises on education, and the most perfect exercises that can be provided.

For a MOTHER's care, for a MOTHER's instruction, for a MOTHER's love, there can be found NO substitute. Guided by affection, and by a solicitude for their welfare, of which a PARENT alone is capable, difficulties will vanish by persevering trial: she will daily become conscious of a growing skill, of a deeper interest; she will witness the success of her efforts; she will read in the smiling intelligent looks of her young pupils, and she will feel in her own heart, the reward of her sacred, her honourable, her happy work.

"Then why resign into a stranger's hand
"A task as much within your own command,
"That God, and nature, and your int'rest too,
"Seem with one voice to delegate to you?"

Even at a more advanced stage of Education, when it may be deemed necessary to introduce an Instructor into the family, the duties of PARENTS are by no means removed, or even lessened. Indeed such is the propensity of our nature to indolence, so plau-

sible and ready our excuses for neglect of duty; such our selfish love of ease, that it would be safer to consider these duties as increased: and so far from allowing such an event to slacken parental cares, it would be wiser, rather to let it serve as a fresh incitement to augmented vigilance, and a stimulus to greater exertion.

There are feelings, there are responsibilities, which belong exclusively to PARENTS: there are offices, there are duties, to the discharge of which, no other can be competent. Let them never forget that they are the "Lords of the Soil;" they have to look not only to present, but to future and permanent produce.

Mr. Edgeworth, in one of his valuable works on Education, suggests the advantages likely to arise from the formation of Education-Societies, consisting entirely of PARENTS. Were this idea carried into execution, it would more effectually assist this great cause, secure the happiness of Parents, and promote the interests of the rising generation, than any other means that could be devised.

And could mothers have a more delightful,

or a more profitable topic for consideration, and discussion, than the intellectual and moral culture of human nature, in its most important and most interesting stage? Would not the time thus spent, be as agreeably, and somewhat more advantageously, employed, than in the assortment of lace and riband? In discussing each other's dress and looks; the success or failure of an entertainment; the shape of a carriage; the superiority of one street, or one set of furniture, or one acquaintance, on the score of fashion, to another? In daily preparations for nightly exhibitions in a crowd, into which neither talents, nor virtues, nor information, nor merit of any sort, will be required as the passport; where the ignorant, the presuming, the frivolous, the insignificant, are on a level with the intelligent, the modest, the actively virtuous, the high-minded?

And it is well if this busy trifling, this frivolity, this dissipation, which is dignified with the name of employment, this contemptible eagerness, this frenzy for what is new, and gay, and fashionable, which has seized all ranks, and encroached upon every sacred duty; if this heartless trifling terminate in

mere folly; if it lead not to sentiments, to feelings, to practices at utter variance with the principles of the religion we *profess*.

Could the author, in the name of Pestalozzi, the friend and benefactor of Parents and Children, succeed in awakening Mothers to a sense of their degradation, when they abandon their children for the world; when they devote that time and that attention to trifles, which, under the guidance of nature and of reason, might be improved to the noblest purposes; could he rouse them to a fulfilment of their high destination; could he persuade Parents to associate, to correspond, to devote themselves to their FIRST duty; he would lay down his pen, and leave the cause in the hands of those to whom it properly belongs; to those most capable of understanding and of executing it; whose bounden duty it is, and whose highest delight it should and might be.

According to PESTALOZZI, NUMBER, FORM, and LANGUAGE, are the foundation of all knowledge. Mothers will find that the following exercises in Number, will awaken and fix the attention, and *gradually* strengthen the minds of their little ones, and therefore prove

both profitable and amusing, *provided* they be properly administered.

Whether these exercises be mastered in twelve weeks, or in twelve months, is a matter of little moment; but until they are mastered (let the time be what it may) I would strongly recommend that children should not be pushed one step in advance.

These exercises will enable children to count *readily* forward, and backward; and to prove, as well as to answer, with ease and promptitude, with or without visible objects, every question that can be proposed in adding, subtracting, &c. under twenty.

This first foundation gradually and pleasantly laid, the mother may proceed, with a reasonable hope of success. Should she, on the contrary, hurry over the first, but most important, as well as most difficult part of the process, and wish her children to make, what she conceives to be a rapid progress, she will prepare for herself constant disappointment, in their uncertain and confused answers, in consequence of their not having been familiarized by a long, patient, and unremitting practice, in FIRST PRINCIPLES.

Mothers, by thus advancing prematurely,

will, far from accelerating, inevitably retard, if not annihilate the very capability of future progress.

I shall give some of these exercises, exactly in the same manner as I have seen them given in the Pestalozzian Institution, as well as in several private families at Yverdun.

The first thing the mother, or one of the elder brothers or sisters has to do, is to let the little ones count with moveable objects, as marbles, beads, beans; or better with small pieces of wood, cut in the shape of cubes or oblongs.

The mother, whom I saw at different times go through these exercises with three children, had been educated in an institution for daughters, which formerly was connected with Pestalozzi's establishment; and she proceeded thus:

The Mother, placing one of the cubes before the children, said: This is *one* cube; and made them repeat it.

Children. This is one cube.

Mother. (Adding a second.) Here you see *two* cub es.

Children. (Touching them with their fingers.) Two cubes.

Mother. (adding another.) There are *three* cubes.

Children. (As before.) Three cubes.

Mother. (Taking up the three cubes, and throwing two upon the table.) How many cubes do you see before you?

Children. We see *two* cubes.

Mother. (Taking up the two, and throwing three cubes upon the table.) How many do you count now?

Children. We count *three.*

Mother. (Having continued as far as five, and throwing four cubes upon the table.) How many are there now?

Children. There are *four.*

(When any of the children gave a wrong answer, she took it for granted that the foregoing step was not *clear* to him; and she returned to the preceding number.)

Mother. (Throwing five upon the table.) How many do you see now?

Children. (After counting them.) We perceive five. In this manner she continued till ten, making the children always repeat the preceding numbers, before she went to a new one; and thus, by frequent, but short repetitions, of a few minutes at a time, they

learned with cheerfulness and without fatigue, to count from one to ten.

(The mother. should introduce as much variety into these exercises as possible, by making the child count her, or his own fingers, the buttons of his jacket or waistcoat, or some other objects near him; and it should never be forgotten, that in order to prevent weariness or disgust, she should give short lessons at a time, but several repetitions of them during the day.)

After having advanced so far as to be able to count from one to ten, the mother now placed an oblong figure before them, saying: Once one.

Children. Once one.

Mother. (Placing a second oblong at a little distance from the first.) Twice one.

Children. Twice one.

Mother. (Adding another.) Three times one.

Children. Three times one.

Mother. (Adding another.) Four times one.

Children. Four times one.

Mother. Five times one.

Children. Five times one.

Thus she continued till she had ranged ten times one oblong upon the table, at equal distances; and all of them in a straight line; their long sides towards the window, and their short sides towards the door.

Mother. (To the children.) Pay attention; we will look at these oblongs, and see whether we can notice any thing besides; first tell me once more, how many oblongs are on the table.

Children. Ten oblongs are on the table.

Mother. Do they lie close together?

Children. No! they do not lie close together.

Mother. In what manner are they separated? Is the first oblong placed nearer to, or further from the second, than the second from the third?

Children. No! they are equally distant from each other.

Mother. Right! we have already noticed something of these oblongs—here are ten oblongs at equal distance from each other.

Children. Here are ten oblongs at equal distance from each other.

Mother. Let us try to discover something more. Could not these oblongs be placed

differently, without changing either their number or distance?

Should the children not observe, that they may be placed in a curved as well as in a straight line, the mother ranges them so as to form a curved line, without changing either their number or distance; and then replaces them in the former straight position. This operation will probably lead them to perceive that they ought to say:

"These oblongs are ranged in a straight line."

Mother. We have discovered again something new, and lest we should forget it, let us repeat whatever we have observed; here are ten oblongs placed at equal distances, and in a straight line.

Children. Here are ten oblongs placed at equal distances, and in a straight line, &c.

(In the same manner did the mother proceed in making the children find out the position of the oblongs with respect to their long and short sides, till they could finally say.)

Children. Here are *ten* oblongs, placed at *equal distances*, in a *straight line*, having their

long sides turned towards the window, and their *short sides* towards the door.

Mother. We can say five different things of these oblongs:

1. That their number amounts to ten.

2. That they are placed at equal distances.

3. That they are ranged in a straight line.

4. That their long sides are turned towards the window.

5. And their short sides towards the door.

(The children, after knowing this well, were desired to turn about, or to shut their eyes; meanwhile she took away two oblongs, and having moved the second nearer to the first, she desired them to face her again, and asked: how many are here now?

Children. (Having counted them.) There are but eight.

Mother. How many were there before?

Children. There were ten.

Mother. How many have I taken away?

Children. You have taken away two (pointing to the vacant places).

Mother. Did not these oblongs undergo any other change?

Children. (Attentively examining them.) Yes. You have moved *that* (pointing to it) nearer to the other.

Mother. Very well! Do you observe any other change?

Each of the Children. I see no other.

Mother. What did you notice respecting the oblongs before you turned about?

Children. There were ten placed at equal distances, in a straight line, their long sides turned towards the window, and their short sides towards the door.

Mother. What change did they undergo whilst you turned about?

Children. There were but eight left, and one of them was moved nearer to another. All the rest remained as before.

Mother. Exactly so!

These and many other changes, by diminishing or increasing the number of oblongs, by making the children find out whatever can be observed with respect to their position, &c. are particularly calculated to fix their attention.

The mother may vary these first exercises,

by drawing lines in different directions, circles, triangles, squares, &c. Thus:

| ○ △ □

The children repeating, One line, one circle, one triangle, one square *.

| ○ △ □

| | ○○ △△ □□

Childr. One line, one circle, one △, one □.

One line and one line.

One circle and one circle.

One triangle and one triangle.

One square and one square.

| ○ △ □

| | ○○ △△ □□

| | | ○○○ △△△ □□□

Childr. One line, one circle, one triangle, one square.

One line and one line.

One circle and one circle.

One triangle and one triangle.

One square and one square.

One line, and one line, and one line.

One circle, and one circle, and one circle.

* This exercise should be performed with chalk, standing at a large slate placed upon an easel.

One triangle, and one triangle, and one triangle.

One square, and one square, and one square.

As soon as the children are aware, that any number whatever is composed of unities, it would be superfluous to let them any longer repeat all the unities of a collective number; and after having continued to draw,

	○	△	□
| |	○ ○	△ △	□ □
| | |	○ ○ ○	△ △ △	□ □ □
| | | |	○ ○ ○ ○	△ △ △ △	□ □ □ □

they may say:

1 line, 1 circle, 1 triangle, 1 square.

2 lines, 2 circles, 2 triangles, 2 squares.

3 lines, 3 circles, 3 triangles, 3 squares.

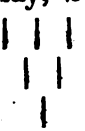
4 lines, 4 circles, 4 triangles, 4 squares: to be continued to twelve.

Each lesson, after having been well exercised either with tangible objects, or the above signs, is then to be repeated without making use of either, till the children are quite firm in their operations, and able to answer any question proposed to them relative to each lesson.

Counting backward.

The mother draws 

Children say, 2 lines, 1 line.

She draws 

Children, 3 lines, 2 lines, 1 line.

Then,  Children, 4 lines, 3 lines, 2 lines, 1 line.

This to be continued, beginning with 5, then with 6, 7, &c. to 20.

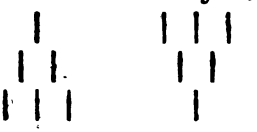
Counting forward and backward combined.

The mother draws one line, and below it two lines. Then, at a small distance, two lines and one below, as: 

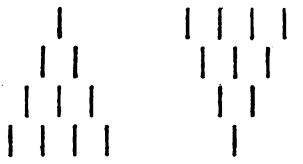
Children repeat, 1 line, 2 lines; 2 lines, 1 line.

They repeat the same operation with various figures.

Draw each of you,



And say, 1 line, 2 lines, 3 lines.
3 lines, 2 lines, 1 line.
Draw each of you,



And say, 1 line, 2 lines, 3 lines, 4 lines.
4 lines, 3 lines, 2 lines, 1 line.
The same to be continued to 20.

As soon as the mother is quite satisfied that her little ones not only take delight in these operations, but can give ready and correct answers in regard to any of them, she may with safety proceed to a *second step*, in the following manner:

Mother. (Placing one cube on the table.) Once 1.

Moth. (Pointing to the one cube.) Once 1; (adding a second to it), more once 1 are twice 1.

Childr. Once 1, more once 1, are twice 1.

Moth. (Pointing to the two cubes on the table.) Twice 1 more once 1 (adding a third cube) are 3 times 1.

Childr. Twice 1 more once 1, are 3 times 1.

Moth. 3 times 1 more once 1 (adding a fourth cube) are 4 times 1.

4 times 1 more once 1 (adding a fifth) are 5 times 1.

Thus she continued, till, 9 times 1 more once 1 are 10 times 1. The children always repeating after her.

In order to convince herself whether the children thoroughly understood the numbers from 1 to 10, she threw a certain number of cubes upon the table, for instance 5, and asked, How many lie now upon the table?

Childr. 5 are lying upon the table.

Moth. If I add to these 5 one more (adding another to them), how many will there be?

Childr. If you add to those 5 cubes one more, there will be 6.

Moth. Why?

Childr. 5 times 1 more once 1 are 6 times 1.

Moth. (Taking away the sixth.) Here are 5 again; but (taking up one) if I take away 1 from these 5 cubes, how many will remain?

Childr. If you take 1 from 5, there will remain 4.

After the children have gone through these exercises (which may be varied and extended,

but very *gradually*, and always with *patience* and *good humour)*, and the elder children practising the younger as far as they know, the mother may make them count as far as 20 in the same manner, proposing to them similar questions; for instance:

Moth. (Throwing at random a number of cubes, exceeding, however, ten, upon the table.) How many cubes are here?

Childr. (After having counted them.) There are 13.

Moth. 13 times 1 more once 1, how many times 1?

Childr. 13 times 1 more once 1, are 14 times 1.

Moth. But 13 times 1 less once 1, how many times 1?

Childr. 13 times 1 less once 1, are 12 times 1.

Moth. If you add to 16 times 1, 3 times 1, how many times 1 does it give?

Childr. By adding to 16 times 1, 3 times 1, it will give 19 times 1.

Moth. But if you take from 16 times 1, 4 times 1, how many times 1 will remain?

Childr. By taking from 16 times 1, 4 times 1, 12 times 1 will remain, &c.

As soon as the children were able, with

facility, to return correct answers to such questions, with and without the aid of visible objects, the mother was convinced that they had perfectly acquired the first elements of combining numbers, and she proceeded to the *combined unity* 2.

Moth. (Placing two cubes together.) Twice 1 are once 2.

Childr. Twice 1 are once 2.

Moth. (Separating them again, and lifting one of them up.) 1 is the half of 2.

Childr. 1 is the half of 2.

Moth. (Placing again the second next to the first.) Twice 1 are once 2.

Childr. Twice 1 are once 2.

Moth. (Adding to the two cubes a third, which she placed below them, thus:)

3 times 1 are once 2 and the half of 3.

Childr. 3 times 1 are once 2 and the half of 2.

Moth. (Adding to the third, a fourth cube, so as to form two pair),

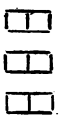
4 times 1 are twice 2.

Childr. 4 times 1 are twice 2.

Moth. 5 times 1 are twice 2 and the half of 2.

Childr. 5 times 1 are twice 2 and the half of 2.

Moth. 6 times 1 are 3 times 2.



Childr. 6 times 1 are 3 times 2.

Moth. 7 times 1 are 3 times 2 and the half of 2.

Childr. 7 times 1 are 3 times 2 and the half of 2.

Moth. 8 times 1 are 4 times 2.

Childr. 8 times 1 are 4 times 2.

This exercise is carried on to, 20 times 1 are 10 times 2, so that twenty cubes are placed by pairs upon the table. This first step in *composing*, or *combining*, will require *much* time and patience.

When the children are quite firm in it, and understand perfectly the nature of the operation, the mother may give the exercise *inversely*, by *decomposing* the combined number, 2. Thus:

(Placing 2 cubes upon the table.) Once 2 are twice 1.

Childr. Once 2 are twice 1.

Moth. (Taking 1 of the cubes up.) The half of 2 is 1.

Childr. The half of 2 is 1.

Moth. (Replacing the cube next to the first.) Once 2 are twice 1.

Childr. Once 2 are twice 1.

Moth. (Adding a third.) Once 2 and the half of 2 are 3 times 1.

Childr. (Always looking at the cubes.) Once 2 and the half of 2 are 3 times 1.

Moth. Twice 2 are 4 times 1.

Childr. Twice 2 are 4 times 1.

Moth. Twice 2 and the half of 2 are 5 times 1.

Childr. Twice 2 and the half of 2 are 5 times 1.

Moth. 3 times 2 are 6 times 1.

Childr. 3 times 2 are 6 times 1.

Moth. 3 times 2 and the half of 2 are 7 times 1.

Childr. 3 times 2 and the half of 2 are 7 times 1.

Moth. 4 times 2 are 8 times 1.

Childr. 4 times 2 are 8 times 1.

This is continued till 10 times 2 are 20 times 1. The mother enunciates, and the children repeat the whole of the lesson; which is followed by many and varied questions, all relating to and arising from the same. As it is essential, deeply to impress on the children's minds this in itself so simple, but to them so apparently complicated relation of unity to a combined number, and of the parts of a combined number to unity, the greatest possible variety must be introduced, in order to vivify the instruction; for which purpose the following examples may assist mothers, who are desirous of attempting this most useful and interesting branch of elementary instruction.

Moth. (Throwing a number of cubes, say 15, upon the table.) How many times 2 are here?

Childr. 7 times 2 and the half of 2. (Should any of the children make a mistake, they must count again till they are right.)

Moth. Right; but how many times 1 are in 7 times 2 and the half of 2?

Childr. In 7 times 2 and the half of 2 are 15 times 1.

Moth. Why?

Childr. In 7 times 2 are 14 times 1; the half of 2 is once 1; 14 times 1 and once 1 are 15 times 1.

The children, before giving the answer, should always repeat the question; by so doing, the mother sees whether it has been *understood*.

Many teachers will consider the observance of this rule as superfluous; perhaps, as an absurdity; but they are mistaken; it has the most decided influence on the development of the faculties of the mind; and the teacher should never forget that the child has not only to learn, but deeply to engraft upon his mind what he himself has long known; but not acquired without great trouble and frequent repetition.

This rule, especially in arithmetical and geometrical exercises, is strictly observed in Pestalozzi's school: and it is undoubtedly owing to its being put into practice, from the first easy and simple steps, that the pupils can solve with facility by head, the most difficult and complicated problems.

Adding Numbers.

In order to introduce as much variety as

possible into these first exercises, the mother may place the cubes in two columns, not too far asunder.

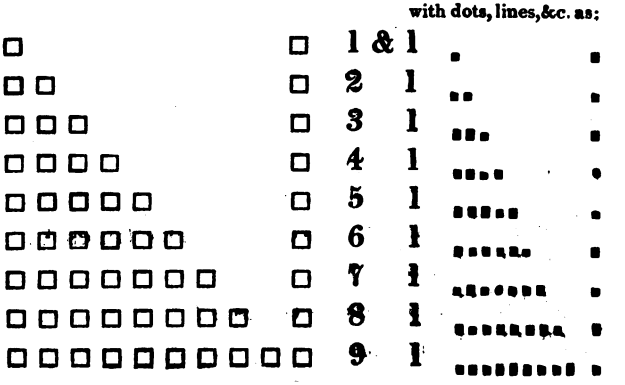
In the column, at the left hand, the number of cubes, according as she adds, 1 or 2, &c. increases from 1 to 9, or from 1 to 10, &c. In the right column, the number of cubes may continue the same.

a. The number of cubes in each column are pronounced, without mentioning the sum which they produce.

b. The sums produced by the single rows of both columns are stated.

c. *a* and *b* are combined.

a. The number of cubes in each column are pronounced, without mentioning the sums they produce, as:



The same exercise may be performed with dots, lines, &c. as:

Before the mother proceeds, the children must be able to give these combinations readily, and to answer any question relating to them.

Questions.

Moth. Shew me, where are 6 and 1?

Childr. Here.

Moth. Where are 3 and 1? How many are in this row?

Childr. In this row are 4 and 1, &c.

b. The sums contained in the single rows of both columns are stated.

1st	row	contains			2
2d	-	-	-	-	3
3d	-	-	-	-	4
4th	-	-	-	-	5
5th	-	-	-	-	6
6th	-	-	-	-	7
7th	-	-	-	-	8
8th	-	-	-	-	9
9th	-	-	-	-	10

Questions.

Moth. In this row are how many times 1?

Childr. 6 times 1.

Moth. Where are 8 times 1?

Childr. Here, &c.

c. Combination of a and b.

1 and 1 give 2
2 - - 1 - - 3
3 - - 1 - - 4
4 - - 1 - - 5
5 - - 1 - - 6
6 - - 1 - - 7
7 - - 1 - - 8
8 - - 1 - - 9
9 - - 1 - - 10

Questions.

Moth. 6 and 1 are how many?

Childr. 6 and 1 are 7, &c.

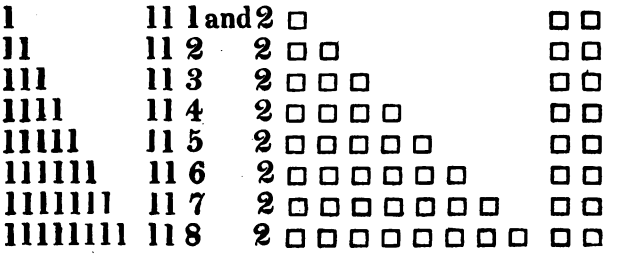
Application.

Moth. If you have 4 apples, and I give you 1 more, how many will you have?

Childr. 5 apples, &c.

2, The mother adds to each number from 1 to 8, 2.

a. The number of cubes, &c. in each column are proclaimed, without mentioning the sums they produce, as



Questions.

Moth. Where do you see 4 and 2?

Child. Here.

Moth. In this row are how many?

Child. In that row are 5 and 2, &c.

b. The sums contained in each row of the columns are stated.

1st row contains 3
2d - - - - - 4
3d - - - - - 5
4th - - - - - 6
5th - - - - - 7
6th - - - - - 8
7th - - - - - 9
8th - - - - - 10

Questions.

Moth. Where are 9 times 1?

Child. Here.

Moth. How many times 1 are in this row?

Child. 8 times 1, &c.

c. Combination of a and b.

1 and 2 are 3
2 - - 2 - - 4
3 - - 2 - - 5
4 - - 2 - - 6
5 - - 2 - - 7

6 and 2 are 8
7 - - 2 - - 9
8 - - 2 - - 10

Questions.

Moth. 5 and 2 are how many?

Child. 5 and 2 are 7.

Moth. How did you make out that 5 and 2 are 7?

Child. 5 are 5 times 1, 2 are twice 1, 5 times 1 and once 1 are 6 times 1; 5 times 1 and twice 1 are 7 times 1.

Application.

Moth. If you have in your hand 6 nuts, and I put 2 more to them, how many have you?

Child. 8 nuts.

Moth. Who will prove that 6 nuts and 2 nuts are 8 nuts?

One of the Childr. 6 nuts are 6 times 1 nut; 2 nuts are twice 1 nut. 6 nuts and 1 nut are 7 nuts; 6 nuts and 2 nuts are 8 nuts.

3, The mother may then have 3 in the right hand column (taking away the 8th row). Then 4 in the right column (taking away the 7th row).

Every Combination of Numbers from 1 *to* 10.

In this exercise the children are taught in how many different ways unities forming a number can be combined. The mother arranges the cubes, puts them together and separates them, according as the course of the exercise may require.

1 and 1 are 2
2 are .. once 2
1 and 1 and 1 are 3
1 - - 2 - - .. - - 3
2 - - 1 - - .. - - 3
3 are once 3
1 and 1 and 1 and 1 are 4
1 - - 1 - - 2 - - .. - - 4
1 - - 2 - - 1 - - .. - - 4
1 - - 3 - - .. - - .. - - 4
2 - - 1 - - 1 - - .. - - 4
2 - - 2 - - .. - - .. - - 4
3 - - 1 - - .. - - .. - - 4
4 are once 4

1 and 1 and 1 and 1 and 1 are 5
1 - - 1 - - 1 - - .. - - 2 - - 5
1 - - 1 - - 2 - - 1 - - .. - - 5

1 and 1 and 3 - - - - - - - are 5
1 - - 2 - - 1 and 1 - - .. - - 5
1 - - 2 - - 2 - - .. - - .. - - 5
1 - - 3 - - 1 - - .. - - .. - - 5
1 - - 4 - - .. - - .. - - .. - - 5
2 - - 1 - - 1 - - 1 - - .. - - 5
2 - - 1 - - 2 - - .. - - .. - - 5
2 - - 2 - - 1 - - .. - - .. - - 5
2 - - 3 - - .. - - .. - - .. - - 5
3 - - 1 - - 1 - - .. - - .. - - 5
3 - - 2 - - .. - - .. - - .. - - 5
4 - - 1 - - .. - - .. - - .. - - 5

5 are once 5, &c.

The remaining combinations with 6, 7, 8, 9, 10, to be formed in the same manner.

Children that have gone through 3 or 4 such combinations, find those that can be formed with the remaining numbers without assistance.

Subtraction.

The mother places 10 cubes separately, taking away one by one till none remain.

1 taken from 10 and 9 remain
1 - - 9 - 8 —
1 - - 8 - 7 —
1 - - 7 - 6 —
1 - - 6 - 5 —, &c.

1 taken from 5 and 4 remain
1 - - 4 - 3 —
1 - - 3 - 2 —
1 - - 2 - 1 —
1 - - 1 - 0 —, &c.

Questions.

Moth. 1 taken from 6, how many remain?

Child. 1 taken from 6, 5 remain, &c.

The mother proceeds to take from ten cubes 2 at a time, and says:

2 taken from 10 and 8 remain
2 - - 9 - 7 —
2 - - 8 - 6 —
2 - - 7 - 5, &c.

till nothing remains.

Questions.

Moth. 2 taken from 6, how many remain?

Child. 2 - - - 4 remain.

Moth. Prove that.

Child. 2 are twice 1, 1 taken from 6, 5 remain, 2 taken from 6, 4 remain.

Application.

Moth. If you have 9 apples, and give 2 of them to your brother, how many will remain?

Child. If from 9 apples I give away 2, I shall keep 7.

Moth. Give me your reason.

Child. 2 are twice 1; 1 taken from 9, 8 remain, 2 from 9, 7 remain.

The mother continues to take from the 10 cubes, 3 each time, till nothing remain.

3 taken from 10 and 7 remain
3 - - 9 - 6 —
3 - - 8 - 5 —
3 - - 7 - 4 —, &c.

Questions.

Moth. 3 taken from 8, how many remain?

Child. 3 taken from 8, 5 remain.

Moth. How do you make that out?

Child. 3 are 3 times 1; 1 taken from 8, 7 remain; 2 from 8, 6 remain; 3 from 8, 5 remain.

Application.

Moth. Suppose you have 7 marbles, and you lose 3 of them, how many will remain?

Child. If I have, &c., 4 will remain.

Moth. Prove that, if you please.

Child. 3 marbles are 3 times 1 marble; 1 marble from 7, 6 remain; 2 from 7, 5 remain, and 3 from 7, 4 remain.

In the same manner, the mother may continue to take from the 10 cubes 4, 5, &c., and

make her pupils always give the reasons for their answers.

Combination of Addition and Subtraction.

In this exercise, to each number from 1 to 8, 2 are added, and 1 is taken away; or 1 added and 2 taken away, as:

a. 1 and 2	give 3		1	taken from 3,	2 remain.
2	2	4	1	-	4, 3
3	2	5	1	-	5, 4
4	2	6	1	-	6, 5
5	2	7	1	-	7, 6
6	2	8	1	-	8, 7
7	2	9	1	-	9, 8
8	2	10	1	-	10, 9
b. 1 and 1	give 2		2	taken from 2,	0 remains.
2	1	3	2	-	3, 1
3	1	4	2	-	4, 2
4	1	5	2	-	5, 3
5	1	6	2	-	6, 4
6	1	7	2	-	7, 5
7	1	8	2	-	8, 6
8	1	9	2	-	9, 7
9	1	10	2	-	10, 8

Questions.

Moth. If from 3 and 2, 1 be taken away, how many remain?

Child. 1 taken from 3 and 2, 4 remain.

Moth. How did you find that?

Child. 3 and 2 are 5, 1 taken from 5, 4 remain.

Moth. How many remain, if from 6 and 1, 2 be taken away?

Child. If from 6 and 1, 2 be taken away, 5 remain.

Moth. How did you find that?

Child. 6 and 1 are 7, 2 taken from 7 leave 5, consequently, 2 taken from 6 and 1 leave 5.

Application.

Moth. If you have 7 shillings in your purse, and your papa should increase your stock with 2 shillings, of which you give 1 away to a poor man, how many remain?

Child. 8 shillings will remain.

Moth. How do you account for that?

Child. 7 shillings and 2 more are 9 shillings, 1 taken from 9 leaves 8, consequently if I have 7 shillings, &c.

Moth. Here I have 8 beans and 1 bean, of which I remove 2 to the other side of the table, how many remain in this place?

Child. 7 beans remain in this place.

Moth. How will you convince me of that?

Child. 8 beans and 1 bean are 9 beans, 2 beans being removed from 9, 7 beans remain.

2, To each number from 1 to 7, 3 are added, and 1, 2 taken away; or 1, 2 added and 3 taken away; for instance:

a.	1	and 3	give 4		1 from 4,	3 remain.
	2	3	5		1	5, 4
	3	3	6		1	6, 5
	4	3	7		1	7, 6
	5	3	8		1	8, 7
	6	3	9		1	9, 8
	7	3	10		1	10, 9
b.	1	and 3	give 4		2 from 4,	2 remain.
	2	3	5		2	5, 3
	3	3	6		2	6, 4
	4	3	7		2	7, 5
	5	3	8		2	8, 6
	6	3	9		2	9, 7
	7	3	10		2	10, 8
c.	2	and 1	give 3		3 from 3,	0 remains.
	3	1	4		3	4, 1
	4	1	5		3	5, 2
	5	1	6		3	6, 3
	6	1	7		3	7, 4
	7	1	8		3	8, 5
	8	1	9		3	9, 6
	9	1	10		3	10, 7

d. 1 and	2 give	3	3 from	3, 0 remains.
2	2	4	3	4, 1
3	2	5	3	5, 2
4	2	6	3	6, 3
5	2	7	3	7, 4
6	2	8	3	8, 5
7	2	9	3	9, 6
8	2	10	3	10, 7

Questions.

Moth. Deducting 1 from 4 and 3, how many remain?

Child. Deducting 1 from 4 and 3, 6 remain.

Moth. How did you find that?

Child. 4 and 3 are 7; 1 taken from 7, 6 remain, consequently deducting 1 from 4 and 3, 6 remain.

Moth. Taking 2 from 6 and 3, what will remain?

Child. Taking 2 from, &c. 7 will remain.

Moth. How do you account for that?

Child. 6 and 3 are 9, 2 taken from 9, 7 remain, consequently, 2 taken from 6 and 3 leave 7.

Moth. Deducting 3 from 7 and 1, how many remain?

Child. Deducting, &c., 5 remain, &c.

In the same manner the mother may increase

the numbers from 1—6 by 4, from 1—5 by 5, and likewise diminish them by 1, 2, 3, &c.

Of the Equality of Numbers.

The mother places the cubes in two columns, from 1 to 10; so that the number of cubes in the different partitions of the first column correspond with that in the partitions of the second column opposite. She enunciates, and the pupils repeat after her.

The cubes are to remain as they have been arranged without separating them; and each number is to be compared with itself, as:

1 is equal to 1
2 are - 2
3 - - 3
4 - - 4
5 - - 5
6 - - 6, &c.
till 10.

Here the cubes of the second column are separated; but those of the first remain untouched. The cubes of the second column are to be formed into 2 partitions, as:

2 are equal to 1 and 1
3 - - 1 - 2
.. - - 2 - 1

4 are equal to 1 and 3
.. - - 2 - 2
.. - - 3 - 1
5 - - 1 - 4
.. - - 2 - 3
.. - - 3 - 2
.. - - 4 - 1
6 - - 1 - 5
.. - - 2 - 4
.. - - 3 - 3
.. - - 4 - 2
.. - - 5 - 1
7 - - 1 - 6
.. - - 2 - 5
.. - - 3 - 4
.. - - 4 - 3
.. - - 5 - 2
.. - - 6 - 1

To be continued till 10.

Questions.

Moth. Which 2 numbers are equal to 5?

Child. 1 and 4 are equal to 5; 2 and 3 are equal to 5; 4 and 1 are equal to 5.

Moth. Prove that 1 and 4 are equal to 5.

Child. 1 and 4 are 5 times 1; 5 times 1 are equal to 5, consequently 1 and 4 are equal to 5.

Application.

Moth. Suppose I give you 4 nuts at 2 dif-

ferent times, how many can I give you each time?

Child. 1 and 3; or 2 and 2; or 3 and 1, &c.

2. The cubes of the second column are to be formed into 3 partitions, as:

3	are equal to	1	and	1	and	1	
4	- -	1	-	1	-	2	
..	- -	1	-	2	-	1	
..	- -	2	-	1	-	1	
5	- -	1	-	1	-	3	
..	- -	1	-	2	-	2	
..	- -	1	-	3	-	1	
..	- -	2	-	1	-	2	
..	- -	2	-	2	-	1	
..	- -	3	-	1	-	1	
6	are equal to	1	-	1	-	4	
..	- -	1	-	2	-	3	
..	- -	1	-	3	-	2	
..	- -	1	-	4	-	1	
..	- -	2	-	1	-	3	
..	- -	2	-	2	-	2	
..	- -	2	-	3	-	1	
..	- -	3	-	1	-	2	
..	- -	3	-	2	-	1	
..	- -	4	-	1	-	1,	&c.

to be continued till 10.

Questions.

Moth. In how many ways can you arrange 3 numbers so as to form 5?

Child. 1 and 1 and 3; 1 and 2 and 2; 1 and 4, and 2 and 1 and 2; 2 and 2 and 1; 3 and 1 and 1.

Moth. Prove that each set of numbers are equal to 5.

Child. 1 and 1 and 3 times 1 are 5 times 1; 5 times 1 are once 5, &c.; consequently each set of numbers I have mentioned are equal to 5.

Application.

Moth. At 4 different times you are to receive 6 shillings, how many can you receive each time?

Child. 1 and 1 and 4; 1 and 2 and 3; 1 and 3 and 2; 1 and 4 and 1, &c.

This exercise may be continued.

Comparison of Numbers by more.

The cubes are arranged as represented below in the two columns.

Nothing is to be mentioned but that 2, 3, 4, &c. are more than 1, 2, 3, &c. without stating by *how much*.

2 are more than 1
3 - 2
4 - 3
5 - 4
6 - 5
7 - 6, &c.
until 10.

3 are more than 2, and more than 1
4 - 3, - 2, 1
5 - 4, - 3, 2, 1
6 - 5, - 4, 3, 2, 1.
&c. till 10.

Here is ascertained *how much* the first number is greater than the second.

a, 2 are 1 more than 1
3 1 - 2
4 1 - 3
5 1 - 4, &c.
till 10 1 - 9
b. 3 2 - 1
4 2 - 2
5 2 - 3
6 2 - 4
7 2 - 5, &c.
c. 4 3 - 1
5 3 - 2
6 3 - 3
7 3 - 4, &c.

2	are	1	more	than	1		
3		1	-	2	and	2 more	than 1
4		1	-	3		2 -	2
..		3	-	1		.. -	..
5		1	-	4		2 -	3
..		3	-	2		4 -	1
6		1	-	5		2 -	4
..		3	-	3		4 -	2
..		5	-	1, &c.			

Questions.

Moth. 5 are how many more than 3?

Child. 5 are 2 more than 3.

Moth. Prove that 5 are 2 more than 3.

Child. 5 are 1 more than 4; 4, 1 more than 3; 1 and 1 are 2, consequently 5 are 2 more than 3.

Application.

Moth. Among 3 boys I distribute some nuts; to the first I give 2, to the second 4, and to the third 6 nuts. Which of these boys has the most, and how many more has he than each of the two other boys?

Child. The third boy has the greatest number of nuts; he has received 2 more than the second, and 4 more than the first boy.

Comparison of Numbers by less.

The cubes are placed in the same way as in the foregoing exercise.

1. Is shewn that 2, 3, 4, &c. are less than 3, 4, 5, &c. without mentioning *how much*.

1 is less than 2
2 are - 3
3 - - 4
4 - - 5
5 - - 6, &c. till 10.

1 is less than 2, 3, 4, - 10
2 are - 3, 4, 5, - 10
3 - 4, 5, 6, - 10
4 - 5, 6, 7, - 10, &c.

2. Here is stated *how much* one number is less than another.

a. 1 is 1 less than 2
2 are 1 - 3
3 1 - 4, &c. till 10.

b. 1 is 2 less than 3
2 are 2 - 4
3 2 - 5
4 2 - 6, &c.

c. 1 is 3 - 4
2 are 3 - 5
3 3 - 6
4 3 - 7, &c.

1	is 1	less than	2	and 2	less than	3
1	4	-	5	5	-	6
..	6	-	7	7	-	8
..	8	-	9	9	-	10
2	are 1	-	3	2	-	4
..	3	-	5	4	-	6
..	5	-	7	6	-	8
..	7	-	9	8	-	10
3	1	-	4	2	-	5
..	3	-	6	4	-	7
..	5	-	8	6	-	9
..	7	-	10, &c.			

Questions.

Mother. 5 are how many less than 7?

Child. 5 are 2 less than 7.

Moth. Try to prove that.

Child. 5 are 1 less than 6; 6 are 1 less than 7; 1 and 1 are 2, consequently 5 are 2 less than 7.

Application.

Moth. One workman earns 5 shillings a day, and another earns 2 shillings; how much less does the latter earn than the former?

Child. The latter earns 3 shillings less than the former.

Combination of the two preceding Comparisons.

a.	1	is	1	less than	2	2	are	1	more than 1
	2	are	1	-	3	3	1	-	2
	3		1	-	4	4	1	-	3
	4		1	-	5	5	1	-	4
	5		1	-	6	6	1	-	5, &c.
b.	1		2	-	3	3	2	-	1
	2		2	-	4	4	2	-	2
	3		2	-	5	5	2	-	3, &c.
c.	1		3	-	4	4	3	-	1
	2		3	-	5	5	3	-	2
	3		3	-	6	6	3	-	3, &c.

a.	1	is	2	less than	3	3	are	1	more than 2
	2	are	2	-	4	4	1	-	3
	3		2	-	5	5	1	-	4
	4		2	-	6	6	1	-	5
	5		2	-	7	7	1	-	6
	6		2	-	8	8	1	-	7
	7		2	-	9	9	1	-	8
	8		2	-	10	10	1	-	9
b.	2		1	-	3	3	2	-	1
	3		1	-	4	4	2	-	2
	4		1	-	5	5	2	-	3
	5		1	-	6	6	2	-	4
	6		1	-	7	7	2	-	5, &c.

c. 1 is 4 less than 5 5 is 3 less than 2
2 4 - 6 6 3 - 3
3 4 - 7 7 3 - 4
4 4 - 8 8 3 - 5,&c.

Questions.

Moth. What number is 3 more than 5, and 2 less than 10?

Child. The number 8.

Moth. 4 are how many more than 1, and how many less than 7?

Child. 4 are 3 more than 1, and 3 less than 7, &c.

Another Exercise, combining Position with Number.

Moth. (Placing a number of cubes, for instance 12, in pairs, upon the table.) How many times 2 are here?

Childr. 6 times 2.

Moth. Mark well how many are placed here; for I shall take some away, and you are to tell how many I have taken away. (The children having viewed them, were desired to turn about, or to shut their eyes; and the mother having taken away seven cubes, made

them face her again.) Now, tell me, how many have 1 taken away?

Child. 3 times 2 and the half of 2 have been taken away.

Moth. But how many times 1 have been taken away?

Child. 7 times 1.

Moth. How many times 2 must be added again, to get the same number as before?

Child. 3 times 2 and the half of 2.

Moth. And how many times 1?

Child. 7 times 1.

Moth. (Adding one cube only.) How many times 2 are now wanting?

Child. 3 times 2.

Sometimes the mother may turn the questions thus: 3 times 2 how many times the half of 2? (Instead of asking 3 times 2 how many times 1;) in order to make it clear, that 1 or the half of 2 means the same thing.

Child. 3 times 2 are 6 times the half of 2.

Moth. Why?

Child. 3 times 2 are 6 times 1; 1 is the half of 2; 6 times 1 are 6 times the half of 2, &c.

In this manner she may replace by degrees all the cubes, by adding now 1, now 2, some-

times more, to prevent the children from proclaiming empty sounds only, without having a clear intuition of what they say: as is the case with our multiplication tables, by which children soon know mechanically, that after the sounds 3 times 4 follow the sound 12; but are unable to answer when the question is put to them inversely: 4 times 3 how many times 1? because these sounds are unknown to them.

Moth. (Having re-placed the six pair of cubes.) How many must I add, to restore our former number?

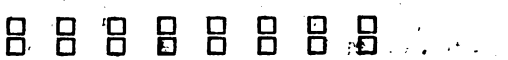
Child. None; the former number of 6 times 2 is complete; or,

Moth. (Having added one cube to the six pair.) How many have I to add, to complete our former number?

Child. None; there is already one too much.

In order to fix still more the children's minds, when counting, to the *position* of objects, she may give the same exercise, in the manner following:

Moth. (Placing as before eight pair of cubes, each pair at equal distance, thus:)



How many times 2 are here?

Child. 8 times 2.

Moth. How are they ranged?

Child. 2 and 2 are placed together.

Moth. Are they placed at equal or unequal distances?

Child. Each pair is placed at equal distances.

Moth. Do you observe nothing else?

Child. Each pair of cubes forms a rectangle, the long sides of these rectangles run parallel, and their short sides in the same direction.

Moth. What position have the long sides of these rectangles, in regard to some part of this room?

Child. Their long sides are turned towards the door, and their short sides towards the window.

Moth. Very well. Lest we should forget whatever we know of these cubes, let us repeat it (together with the children).

a. 8 times 2 cubes are placed here.

b. Each pair is so ranged as to form a rectangle.

c. These rectangles are equally distant from each other.

d. The long sides of these rectangles are

parallel, and their short sides in the same direction.

e. They have their long sides turned towards the door, and their short sides towards the window.

Now, mark, how many cubes are here, and in what manner they are placed.

Turn about. (Meanwhile she may take away some, for instance, five, and the children having again faced the table, she may ask:) What change has taken place? Are the cubes still situated as they were before?

Child. Yes; they are exactly situated as before, but some of them are wanting.

Moth. How many times 2 are wanting?

Child. Twice 2 and the half of 2.

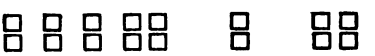
Moth. How many times 1 are wanting?

Childr. 5 times 1 are wanting.

Moth. Which did I take away?

Childr. (Describing precisely which were taken away.)

Moth. Turn about again. (Replacing the cubes she had taken away.)



How many have I taken away?

Childr. (Having turned about and looked at them.) You have taken away none.

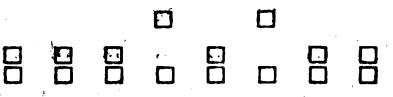
Child. Yes, the second pair (from the right) has been moved closer to the first pair, and the fourth nearer to the fifth, and consequently farther from the third.

Moth. Right. Has any change taken place with regard to their direction?

Childr. No, the direction is the same.

The mother repeats with them all the changes which have taken place.

Moth. (Separating two pair of cubes, so that one of each pair remained in its original situation, but the two others were moved out of the straight line, their sides remaining unchanged, thus):



How many of these cubes have I taken away?

Child. None; but they are placed differently from what they were before.

Moth. Has the position of all of them been changed?

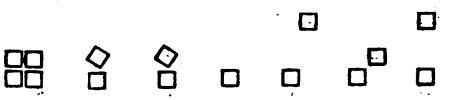
Child. No, the position of two only has been changed.

Moth. Exactly! But in what manner is their position altered?

Child. They are separated from those cubes

to which they were united before; the third and fifth pair, which, like the rest, formed rectangles, have been disunited, and no longer lie in the same line with the 6 remaining rectangles.

At another exercise the mother, placing 8 pair of cubes at equal distances, as before, desires the children to turn about, and then makes the following changes.



Moth. Now look, and tell me what changes the cubes have undergone.

Childr. Oh! what confusion.

Moth. Examine them minutely pair by pair, and you will be able to state all the changes that have taken place:

How many times 2 were there before?

Child. The half of 2 has been taken away.

Moth. That is what I do not wish to know at present; I want to hear how many times 2 there were before.

(It is important to be distinct and precise in proposing questions, and to require the children to return precise answers.)

Child. 8 times 2.

Moth. How many times 2 are yet here?

Child. 7 times 2 and the half of 2.

Moth. How many times 2 are wanting?

Child. None, the half of 2 only is wanting.

Moth. From whence has the half of 2 been taken away?

Child. Here, (pointing to the vacant place above the single oblong.)

Moth. Describe minutely the place where the wanting cube was situated.

Child. The wanting cube was situated above that which is the fourth in the lower row from the right.

Moth. Exactly! We now know that one cube has been taken away, and the place from whence it has been taken away.—But mention all the other changes which have taken place. (As one child noticed first this, another that change, she said): I have made so many alterations, that we must go step by step, and examine one pair after the other; and to do this the better, let us once more repeat whatever we noticed when we looked at them last.

(Here the before-mentioned situation of the cubes is to be repeated.)

Moth. In their former position each pair of cubes formed a rectangle; is this the case still?

Child. No; the first pair on the right, which before formed a rectangle, is now disunited. Of the second pair one cube has been moved a little to the right, and forms no longer a rectangle with the other. Of the third pair, one has also been placed to the right, and at some distance from its fellow. The fourth no longer forms a pair, for one is wanting. The cubes of the fifth and sixth pairs are still close together, but not parallel, and for that reason can no longer form rectangles. The seventh and eighth pair are so situated as to form a square.

Moth. In the former figure the rectangles were placed at equal distances; is this the case now?

Child. No! The seventh and eighth rectangle are moved close together; the remaining six no longer exist.

Moth. In the former figure the long sides of the rectangles were parallel; how are they now?

Child. Now the long sides of the seventh and eighth rectangle only are parallel.

Moth. Right! Let us before we proceed recapitulate what we have hitherto noticed. (The mother now repeats with the children all the changes she has contrived, in the same order in which they have found them out.)

This occupation of the children may be considered as *one* of the most useful and developing in domestic education, but it cannot be too frequently pressed upon the attention of mothers, that whatever may be the exercise, it should be step by step, and *hurry* is to be avoided on their part, as well as carefully guarded against on the part of the child—and that one of the most important of the children's daily duties is to teach their young companions, with patience and cheerfulness, what they themselves have acquired: let them constantly keep in remembrance, by hourly practice, that they are learning, in order to communicate.

It is a principal character of Pestalozzi's method not to admit of any, not even of the smallest omission; but to set out from the first point of knowledge, if I may be allowed this expression; and to lead the pupil *insensibly* to the highest possible degree of proficiency.

If the mother be aware that the child can-

not perform any exercise with accuracy and firmness, she should not proceed.

It is only the full conviction of the child's being perfect master of the preceding step, that should determine the teacher to lead him on to the next.

The same exercises which have been given with material objects, may afterwards be given without them. Thus, the mother seeing that the child, with the aid of real objects, has so far advanced as to know: that 8 times 1 are 4 times 2, and 4 times 2, 8 times 1, may propose, without the aid of them, questions similar to those which follow:

Moth. 3 times 2 and the half of 2, how many times 1?

Child. 3 times 2 and the half of 2 are 7 times 1.

Moth. Why?

Child. 3 times 2 are 6 times 1—the half of 2 is 1, 6 times 1 and once 1 are 7 times 1.

Moth. 5 times 1, how many times 2?

Child. 5 times 1 are twice 2 and the half of 2.

Moth. Why?

Child. 4 times 1 are twice 2; once 1

is the half of 2; 4 times 1 and once 1 are 5 times 1.

Similar questions are applicable to all ordinary objects of life; for instance:

Moth. Two sixpences make 1 shilling, how many shillings do 7 sixpences make?

Child. 7 sixpences make 3 shillings and the half of a shilling.

Moth. Why?

Child. 2 sixpences make 1 shilling; 4 sixpences make 2 shillings; 6 sixpences make 3 shillings; 1 sixpence is the half of a shilling; 7 sixpences are 3 times 2, and the half of 2 sixpences; 7 sixpences, therefore, are 3 shillings, and the half of a shilling.

Moth. 2 pair of shoes and half a pair, how many single shoes?

Child. 2 pair of shoes and half a pair are 5 single shoes.

Moth. Why?

Child. 1 pair of shoes consists of 2 single shoes; twice 2 single shoes are 4 shoes; the half of a pair is 1 single shoe; 4 shoes and 1 shoe make 5 shoes.

After several questions of this nature, the mother may proceed to the combined unity of

3 and of 4, continuing the use of cubes, or of other objects.

Moth. (Placing 3 cubes in a straight line at equal distances.) How many times 1 are here?

Child. 3 times 1.

Moth. (Lifts up 1 of the 3 cubes, shews it to them and places it at some distance from the two others.)

□ □□

Once 1 is the third part of 3.

Child. Once 1 is the third part of 3.

Moth. (Removing one of the two cubes which lie close together, and placing it next to the single one.)

□□ □

Twice 1 are twice the third part of 3.

Child. Twice 1 are twice the third part of 3.

Moth. (Moving the third cube nearer to the two first, so that all 3 are lying in the same line and at equal distance.)

□□□

3 times 1 are (moving all 3 close together, so as to form a rectangle □□□.) once 3.

Child. 3 times 1 are once 3.

Moth. (Placing a fourth cube below the first of the 3 former, so that with the fourth a new row begins, as represented here.)

4 times 1 are once 3 and the third part of 3.

Child. 4 times 1 are once 3 and the third part of 3.

Moth. 5 times 1 are once 3, and twice the third part of 3.

Child. Repeat.

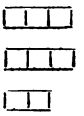
Moth. 6 times 1 are twice 3.

Child. 6 times 1 are twice 3.

Moth. 7 times 1 are twice 3, and the third of 3.

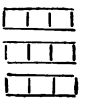
Child. 7 times 1 are twice 3 and the third of 3.

Moth. 8 times 1 are twice 3, and twice the third part of 3.



Child. 8 times 1, &c.

Moth. 9 times 1 are 3 times 3.



Child. 9 times 1 are 3 times 3.

The various exercises which the mother has given to the children relative to the combined unity of 2, may be repeated with the combined unity of 3, the mother continuing to form rows of 3 cubes one after another, till she has placed 10 times 3 cubes before them.

As soon as the children have advanced so far as to answer and to prove without the aid of cubes or other objects, to the mother's question: 26 times 1, how many times 3? 26 times 1 are 8 times 3, and twice the third part of 3; and inversely, to the question: 7 times 3 and the third part of 3, how many times 1? 7 times 3 and the third part of 3 are 22 times 1; she then proceeds to the combined unity of 4, 5, &c. in the same manner.

Those who are neither theoretically nor practically versed in methods of *development,* who have been accustomed to mistake mere *instruction* for *education,* will probably inquire; To what purpose all the preliminary steps, the exercises, the questions, the descriptions, the minute observations recommended in former numbers, and the many preparations for arithmetic, in this? Can we do better than have our children taught to *read* as early as possible, in order not only to furnish them with an independent amusement (which we find extremely convenient), but one also which will enable them to learn much by themselves, in a short period? To such inquiries, it may be briefly answered, that the Pestalozzian system, taking nature for its guide, professes gradually to unfold, patiently yet vigilantly to watch, tenderly to support and assist; not prematurely to *force,* far less to *stifle:* which it may be feared will be the effect of an eager and rapid perusal of the books now so unsparingly provided for youthful instruction. These it is admitted are infinitely superior to the mere stories and fairy tales, formerly composing the juvenile library; and being often upon useful and

scientific subjects, they may furnish valuable hints to parents; but they should *seldom* be put into the hands of their pupils: as instead of developing the child's faculties, and giving him a consciousness of growing *strength*, they will weaken, if not destroy, the powers they were intended to cultivate.

Many adults are utterly at a loss to explain themselves, either verbally or in writing, with accuracy and precision, upon the most familiar subjects; this difficulty arises from the want of proper early attention and exercise, and can only be guarded against by constant, judicious, gradual development of *all* the powers from infancy.

These exercises will be found, under RIGHT administration, to give the child distinct ideas of numerical relations, at the same time they are calculated to form habits of attention; to create a spirit of inquiry; to develop his faculty of observing, of comparing, of describing: to unfold his power of internal intuition, and to cultivate and strengthen the faculty of speech.

When once the Pestalozzian SPIRIT is imbibed, mothers will no longer consider their children as clogs upon their business or their

pleasures; nor, in order to rid themselves of the irksome restraint, will they wish to provide them with a solitary and an independent employment; they will no longer unnaturally consider time devoted to their infants as lost to pleasure; but they will desire to associate them with every thought, every action, and every scene, which they will delight in rendering conducive to the real improvement, and to the present and future usefulness, and happiness of their little ones.

They will despise the authority of that wretched world by which they are now enslaved; they will no longer blindly yield to its dictates; they will cast off the prejudices which they have imbibed in it; they will return to their most sacred duty; they will create a home of confidence, of joy, of gratitude, of love; and prove themselves WORTHY of the name of MOTHER.

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